SCIENTIFIC CERTIFICATION SYSTEMS

A Preliminary Assessment of the Management of:

Michigan Department of Natural Resources State Forest Program

Relative to the Standards of Third-Party Certification under the Forest Stewardship Council

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Introduction

The Michigan Department of Natural Resources (MI DNR) retained Scientific Certification Systems to provide detailed information about the feasibility and costs of achieving third-party certification of its State Forest Program. Certification of forest management programs by independent, third parties has become increasingly common world-wide for a variety of reasons. Within the upper Lake States region, major paper manufacturers are encouraging landowners to consider certification in response to pressure from paper buyers, notably Time Inc, the world's largest buyer of paper.[1] Certification provides assurance to customers, managers, landowners, and the general public that objective standards are being met in the management of forests. Certification also helps land managers understand how their programs and practices compare with other organizations and helps these managers improve their forestry and conservation practices.

To further its understanding of certification, the MI DNR issued a request for proposals to conduct feasibility studies (also referred to as scoping assessments or preliminary evaluations) of Michigan's State Forest Program relative to the principles and criteria of the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative® (SFI) certification programs.

Scientific Certification Systems (SCS) of Emeryville, California and NSF International Strategic Registrations (NSF) of Ann Arbor, Michigan joined to prepare and submit a joint proposal in response to MI DNR's request. MI DNR awarded a contract, and the two firms began work in September, 2004. This report summarizes the findings of the FSC portion of this joint FSC – SFI Gap Analysis and Readiness Review, otherwise known as a Preliminary Evaluation.

Format Used to Address Assessment Issues

MI DNR agreed to a joint FSC – SFI preliminary evaluation using a single three-person audit team. The audit was conducted by:

- FSC Lead Auditor, Dr. Robert Hrubes, SCS
- SFI Lead Auditor Mike Ferrucci, NSF-ISR and FSC team member
- Dave Capen, Team Member

Biographies of the audit team can be found in Appendix 1.

[1] TI Paperco Inc., which buys paper for all of Time's 135 magazines and other uses, has announced procurement guidelines which give preference to paper containing specified content produced from forests that have been sustainably managed. In November of 2003, the company announced its decision to increase its purchases of paper from suppliers based in Maine due to the state's commitment to certification (see http://www.nlcomposer.com/publishers/mainewoodsman/newsletters/Newsletter-60.htm).

The preliminary evaluation/gap analysis consisted of the following phases:

- Phase I - Scheduling, Document Request and Planning
- Phase II - Office Review and Field Assessment
- Phase III - Report Preparation and Revisions
- Phase IV - Presentation to Michigan DNR Representatives

The purpose of a preliminary certification evaluation is to provide a forestland owner or manager with early and strategic insight as to their preparedness to achieve FSC or SFI endorsed certification, were a full evaluation to be carried out. A preliminary evaluation constitutes a "gap analysis" with which forestland owners and managers are better able to identify aspects of their management program that may be deficient relative to the certification standard and, thus, could serve as obstacles to achieving certification, were a full evaluation to be undertaken.

SCS Background Information

Scientific Certification Systems (SCS) is an FSC-accredited auditing and certification company that has certified forest operations world wide, totaling over 14 million acres. In the U.S., SCS has worked with state forestry agencies in the following states:

- Wisconsin
- Washington
- Maine
- Pennsylvania
- Maryland

Additionally, SCS has been selected by the States of Oregon and California to provide certification services, but those projects are on hold pending funding.

SCS has issued over 600 chain-of-custody certificates, also under the aegis of the FSC. These certificates are associated with over 35 countries, around the world. SCS has been a FSC-accredited certification body since 1995.

Preliminary evaluations are a standard first step in the FSC-endorsed certification process and are designed to afford insight to a forest management entity as to general areas of strength and weakness relative to the standards of certification. The results of a preliminary evaluation will enable forest managers and decision-makers to make more informed decisions as to the merits and potential costs or implications of seeking FSC-endorsed certification.

It is important for all interested parties to understand that a preliminary evaluation does not provide any guarantees as to the outcome of a full certification evaluation. Because of its preliminary and limited nature, this first step in the certification process is properly framed as an indication and expert judgement as to the likely outcome of a full

evaluation, were one to be conducted. But both false positive and false negative preliminary judgements could arise during a preliminary evaluation, though SCS employs only its senior staff and experienced outside consultants to conduct preliminary evaluations so as to enhance the robustness of the process.

Summary of Events

Prior to the field evaluation, the audit team conducted desk reviews of key documents describing the Michigan State Forest System. The field component of the preliminary evaluation was conducted from October 24 through October 29, 2003 and included the following activities:

Sunday October 24, 2004
Hrubes, Capen and Ferrucci fly into Lansing; final audit preparations that evening

Monday October 25, 2004
Team: DNR Offices, Lansing, Michigan
8 am to 2 pm – overview of DNR Divisions
2 pm to 4 pm – stakeholder interviews

Tuesday October 26, 2004
Team: Roscommon Operations Service Center
Team: Roscommon Unit Office
Team: Roscommon Field Visits (am)
Team: Grayling Field Visits (pm)

Wednesday October 27, 2004
Mike Ferrucci: Gladwin Unit
Robert Hrubes: Traverse City Unit
Dave Capen : Gaylord Unit

Thursday October 28, 2004
Mike Ferrucci: Shingleton Unit
Robert Hrubes: Eastern UP District Office, Newberry
Dave Capen: Escanaba Unit, Crystal Falls Unit

Friday October 29, 2004
Team: Marquette Service Center – interviews/ meeting with staff (am)
Team: Closing Briefing (pm)

Individuals Interviewed

During the course of the full week of meetings and field inspections in late October, the audit team members had the opportunity to meet and talk with an extensive number of DNR employees at all levels of the agency, from Deputy Director Koch down to field technicians. Interviews took place in both individual and group settings, both in offices and in the field. Additionally, the audit team conducted face-to-face interviews with a cross section of key stakeholders in the afternoon of the Day 1, in the Lansing office. As well, the auditors pursued opportunities to interview contractors and state forest users during the field reconnaissance on Days 2-4.

A comprehensive list of all DNR personnel, contractors and stakeholders that the auditors interacted with during this preliminary evaluation is maintained in the audit files at the SCS headquarters office.

Format of Findings

Under the umbrella of the FSC, forest management operations are evaluated against a set of standards known as the *FSC Principles and Criteria of Forest Stewardship,* which in this case are further elaborated by the duly endorsed regional standard, FSC Lake States Standard. Like all National and Regional Standards, the FSC Lake States Standard provides regionally-specific elaborations and interpretations of the P&C, in the form of *indicators* and *verifiers* (there are very few verifiers in the Lake States regional standard).

To follow are the SCS audit team's findings, presented in three formats:

- A general overview of strengths and gaps relative to the FSC standards.
- A summary of possible gaps/deficiencies relative to the FSC Principles and/or Criteria.
- Additional, more specific comments relative to the more detailed *indicators and verifiers* constituting the **FSC Lake States Regional Standard-** Appendix 2.

The reader is reminded that preliminary evaluations, by their very nature, are not definitive determinations of the degree of conformance to the certification standard. Only a full certification evaluation, conducted under the auspices of the FSC and according to FSC protocols, will generate definitive determinations of conformance. In contrast, preliminary evaluations provide the audit team's professional judgments as to possible non-conformances, based upon limited exposure to the forest management operations. That is, the results of preliminary evaluations constitute findings as to the likelihood that the candidate forest management operation would be found in conformance to the standard, were a full evaluation to be conducted.

In instances where possible non-conformances or "gaps" are identified and discussed in this report, we recommend that DNR pursue a combination of the following responses, between now and the time of a full evaluation:

- In the event that DNR believes that an identified gap, in fact does not exist despite the findings of the preliminary evaluation team, compile additional information and evidence to submit to the full evaluation team—on or before the conduct of the full evaluation--that better demonstrates how DNR is conforming to the particular criterion or indicator
- Formulate, and implement as far as possible, corrective actions aimed at closing the identified gaps.

Findings

General Overview

Based upon the information gathered and preliminary judgments formed from document reviews, personal interviews and field inspections, it is the SCS audit team's general sense that the Michigan State Forest Program can achieve FSC-endorsed certification provided that between now and when a full assessment is undertaken, or following a full assessment but prior to award of certification, Michigan DNR makes a commitment to address the following areas that presently constitute gaps of a more substantive nature:

- Pursuing strategies for assuring a higher level of compliance with safety BMPs and regulations on the part of woods workers (logging crews), per Criterion 4.2
- Developing mechanisms for more explicitly and systematically assessing and monitoring the social effects of state forest management decisions, per Criterion 4.4
- Expanding environmental impact evaluations to more effectively incorporate landscape scale effects and considerations, per Criterion 6.1
- Ramping up the effort to reach completion of the old growth/biodiversity initiative that was begun over a decade ago, per Criterion 6.4
- Making sure that DNR is not using (on the state forests) chemicals that are found on the FSC list of prohibited chemicals, per Criterion 6.6[2]
- Ramping up the landscape planning process[3] so that the plans will be completed on a much faster time schedule than is likely the case under the current level of effort, per Principle 7

[2] Because of the preemptory nature of the FSC prohibited chemical policy, we list this issue as a potential major non-conformance. But, overall, we consider the DNRs use of chemicals in the management of the state forests to be quite conservative and generally compatible with Criterion 6.6

[3] The audit team recognizes that the present approach being pursued by DNR to address "landscape planning" is the eco-regional planning process first developed for use on the Lake Superior State Forest. Because of DNR's familiarity with the term "eco-regional planning" we use this term in this report, but in a more generic connotation of planning aimed at addressing and incorporating large scale—both spatially and

- Likewise, building upon current monitoring activities in order to better cover the range of topics addressed in Criterion 8.2 and to better incorporate the results of monitoring into management planning, per Criterion 8.4
- Compiling and presenting in a comprehensive format the actions undertaken by DNR that demonstrate the manner in which it is meeting the high conservation value analysis and management requirements contained in Principle 9.

In addition to these gaps, and as is detailed in Appendix 2, the audit team has identified a number of other potential non-conformances with other, more narrow aspects of the certification standard. While the audit team does not expect that these additional gaps would present a barrier to the award of certification, effort taken to address these potential non-conformances prior to the full evaluation would likely reduce the number of minor CARs that might otherwise accompany award of certification. Examples of these less substantive non-conformances include:

- Exploring methods of interacting with the 5 Michigan tribes that augments current methods and that helps to demonstrate a level of cooperation/collaboration that is called for in Principles 3 and 4
- Developing mechanisms for keeping SCS appropriately informed of changes in management plans and the certified land base, per Criterion 1.6, as well as the status of unresolved disputes over tenure and use-rights, per Criterion 2.3
- Developing a process for issuing a public summary of the results of monitoring activities, per Criterion 8.5.

Gaps notwithstanding, our overall assessment is that the DNR's management of the Michigan State Forests is a highly effective and competent mechanism for achieving the practice of responsible forest management on a environmentally and socially important public forest estate. The type of forest stewardship being practiced by the DNR, while at present perhaps not adequately covering every base required by the FSC, is nonetheless a very "good fit" with FSC-endorsed certification.

Findings Relative to the FSC P&C/Lake States Regional Standard

As mentioned previously in this report, award of FSC-endorsed certification does not require perfection or across-the-board exemplary performance; deficiencies are acceptable provided that:

- the totality of the management program can be considered exemplary

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temporally—considerations into tactical planning and operations. The audit team, by using this term, is not suggesting that the LSSF protocols must be used broadly across the state forest system, although that may well be the direction continued by DNR. What matters is that DNR adopt strategies for accelerating the pace by which landscape-level planning is completed. The methods and approaches that are employed are up to DNR.

- there is fundamental conformance with the breadth of each of the FSC *Criteria*[4] and
- provisions, i.e., *Corrective Action Requests (CARs),* are stipulated by the certifier and accepted by the certification applicant for addressing identified deficiencies.

In the context of the FSC P&C, this concept generally means that non-conformance at the indicator level is potentially certifiable[5] but non-conformance at the higher level of a criterion is not certifiable. In light of this "decision rule," a certifier's accredited procedures must expressly ferret out criterion-level non-compliance that would preclude award of certification. In the SCS Forest Conservation Program protocols, this is accomplished through two mechanisms:

- *Fatal flaw indicators/scoring guidelines* present in the relevant approved regional standard. The Lake States Standard identified Indicators 4.4.e, 5.6.a, 6.2.a and Criterion 6.4 to be fatal flaws. Non-compliance with a fatal flaw triggers the issuance of Major CARs/pre-conditions (i.e., certification cannot be awarded).
- *Accredited evaluating protocols* that lead to findings of conformance at the criterion level by individually evaluating the separate indicators.

FSC Principles & Criteria

FSC Principle 1: Compliance with Laws and FSC Principles

This FSC Principle is elaborated through a set of 6 Criteria that focus on issues such as conformance to all applicable national and local laws and regulations, payment of legally prescribed fees, taxes and royalties, protections against illegal harvesting and other unauthorized activities, and demonstrating a long-term commitment to adhere to the FSC Principles & Criteria.

Comments and Observations:

As a state agency managing publicly owned forestland subject to an extensive body of governing statutes and regulations, the audit team observed nothing to suggest that DNR is not managing to solid overall conformance with its legal mandates. The matter of controlling illegal use, particularly unauthorized ORV use, is a major management challenge but one that DNR is clearly affording considerable effort and priority. Funding limitations, if made even more severe, could threaten conformance to this aspect of Principle 1.

[4] As discussed later in this report, the audit team as concluded that FSC Principle 10 does not apply to the State Forest program and its possible certification under the FSC.

[5] There are some criteria or sub-criteria for which non-compliance would constitute an impediment to award of certification, regardless of offsetting strengths. Such "fatal flaw" issues include: use of GMO's, use of prohibited chemicals, conversion of natural forest to plantations, lack of a written management plan.

Overall, it is our sense that a full evaluation would confirm adequate conformance to this Principle such that any observed gaps would not constitute a barrier to award of certification.

FSC Principle 2: Tenure and Use Rights and Responsibilities

This FSC Principle, detailed through 3 Criteria, focuses on the long-term tenure and use rights to the land that is undergoing certification evaluation. Forest managers seeking FSC-endorsed certification must establish clear and legal ownership or right to manage the defined forest area that is being evaluated. Customary use rights, if clearly demonstrated, must be appropriately honored.

Comments and Observations:

In the judgment of the SCS audit team, the Michigan DNR's management of the State Forests appears to be well positioned relative this FSC Principle, as indicated by the following observations:

- The legal/tenure status of the Michigan State Forests and DNR's statutory authority to manage the system is beyond dispute
- Customary recreational uses are accommodated and managed in an exemplary manner; the state forests represent an extremely important outdoor recreation resource for the people of Michigan and the upper Lake States region
- Other uses such as oil & gas and sand & gravel are allowed under effectively administered leasing frameworks
- Appropriate mechanisms are available to resolve disputes over tenure claims and use rights.

Overall, it is our clear sense that a full evaluation would confirm adequate conformance to this Principle such that any observed gaps would not constitute a barrier to award of certification.

FSC Principle 3: Indigenous Peoples' Rights

This FSC Principle is concerned about the rights of indigenous peoples to own, use and manage their lands and territories. There are 4 Criteria that elaborate upon this principle. For most non-Indian owned lands in the U.S., the relevance of this Principle is pertinent with respect to protection of sites of special cultural or ecological importance and with respect to compensation for the application of traditional knowledge that can be attributable to defined indigenous peoples (note: we are not aware of any instance to date where this compensation obligation has been invoked; indeed, we find such a possibility to be highly unlikely in a socio-legal framework such as exists in the U.S.).

Comments and Observations:

In the judgment of the audit team, the applicable components Principle 3 in the context of the management of the state forests is limited to Criteria 3.2 and 3.3. With respect to this narrowed scope, it is the audit team's preliminary judgment that DNR is operating in generally adequate conformance, though there are opportunities for improvement that might be elaborated in a full evaluation.

Aspects of DNR's administration that contribute to our preliminary judgment that conformance to Principle 3 is likely to be found adequate in a full evaluation include:

- DNR has a senior staff position that is dedicated as state-wide tribal liaison
- Tribal contacts are included on public notice distribution lists and open house invitation lists
- The compartment reviews include consultation with the Department of History, Arts and Libraries (HAL)—coordinates for sites of planned site disturbing activity (principally timber harvesting and mineral leasing) are conveyed to the Environmental Review Coordinator at the Michigan Historical Center in Lansing

Overall, it is our sense that a full evaluation would confirm adequate conformance to this Principle such that any observed gaps would not constitute a barrier to award of certification. It is possible, however, that a full evaluation would find a need to pursue more affirmative and culturally effective means of interacting with Michigan's five tribes in the context of tactical planning (compartment reviews). Open houses are not well attended, in general, and it is our understanding that active tribal involvement in both open houses and compartment reviews is extremely rare. The FSC standards speak to affirmative outreach using culturally sensitive methods that enhance the likelihood of active dialogue and collaboration

FSC Principle 4: Community Relations and Worker's Rights

This FSC Principle, elaborated through 5 Criteria, addresses the effects of forest management on the well being of forest workers and local communities. The Criteria focus on issues such as: preferences for local employment, compliance with employee health and safety regulations, rights of workers to organize, completion of social impact assessments, and employee grievance resolution mechanisms. In short, this Principle expresses the position that exemplary forest management must include a conscious sensitivity to the interests of the most directly impacted stakeholders: employees, contractors and local communities.

Comments and Observations:

With respect to the scope and thrust of this Principle, it is the audit team's preliminary evaluation that Michigan DNR manages the state forests to an exemplary level of conformance. But, as briefly discussed below, there are two specific aspects of

this Principle where a gap likely exists and, as such, where one or more CARs might emerge from a full certification evaluation.

Criterion 4.1 addresses local opportunities for employment and other forest services. With respect to his Criterion, we note that most DNR employees were raised and educated in Michigan, that most contract loggers are locally based and that the state forests are an extremely important resource for a wide array of outdoor recreation activities valued by the citizens of Michigan; activities such as: hunting, fishing, snowmobiling, ATVing, mountain biking, camping, canoeing. All of these activities, in turn, generate substantial local employment throughout the rural regions of the state, for activities such as guide services, equipment sales, etc. In short, we consider DNR and the state forests to be a major positive contributor to the employment base and general well being of the rural regions in which the state forest units are located.

Criterion 4.2 requires conformance with all applicable laws and regulations with regard to human health and safety. Here, the team concludes that there is a mixed record. With respect to DNR employees, we observed nothing to suggest non-conformance. But with respect to forest workers not employed by the DNR, particularly loggers employed by contractors that purchase timber from the state forests, the audit team observed a general lack of conformance with generally accepted safety practices such as the use of safety gear. While we understand that there is a certain contractual separation between DNR and these woods workers, the fact remains that safety practices are not being adequately adhered to when it comes to logging activities on the state forests. A full certification evaluation will likely lead to a CAR that asks DNR to find appropriate means for addressing and correcting this situation.

Criterion 4.3 deals with the right of employees and workers to organize and collectively bargain. We note that there are several unions that have DNR members within their ranks. We also note that the state of Michigan has long association and history of unions and that state laws provide for the rights to organize. To the extent that DNR timber sale contracts include standard provisions requiring contractors to comply with all applicable state and federal regulations, then conformance to this Criterion is also demonstrated for woods workers. If such contract provisions are not part of the standard timber sale contracts, a CAR asking for such an inclusion would be likely as part of a full certification evaluation.

The most notable gap relative to this Principle pertains to Criterion 4.4, which requires social impact evaluations as part of management planning and operations. While we can point to various aspects of the DNR's administrative activities that are somewhat responsive, it is our sense that there is insufficient social impact evaluation in a structured and/or properly document manner, particularly in the context of the compartment review process.

Criterion 4.5 focuses on dispute resolution mechanisms and, here, it is our preliminary judgment that the manner in which DNR employees seek to resolve conflicts

informally and early are quite effective. We also note that the court system provides an avenue of last resort that is quite effective.

Overall, it is our sense that a full evaluation would confirm adequate conformance to this Principle such that any observed gaps would not constitute a barrier to award of certification.

FSC Principle 5: Benefits from the Forest

This FSC Principle addresses several loosely related issues such as efficiency in the use of forest products, financial viability of the forest management operation, and diversity of environmental and social benefits from forest management. Principle 5 is elaborated through 6 Criteria. Of note, Criterion 5.6 requires that the rate of harvest not exceed levels that can be permanently sustained, perhaps one of the most focused and specific requirements found throughout the P&C. The other 5 criteria within this principle address matters such as balancing financial objectives with full cost accounting (including environmental costs), optimal use of harvested products and local processing, minimization of waste and residual stand damage, diversification of products from the forest, and protection of forest services such as watershed functions and fisheries values.

Comments and Observations:

Without question, the Michigan State Forests generate important benefits to the people of Michigan, including such things as:

- Timber (sawlogs, pulp logs, biomass chips) harvested from the state forests and that is processed in regionally based wood products facilities
- Economic activity and employment associated with oil & gas and sand & gravel leases on state forest land
- Employment opportunities, both directly for the DNR and through contractors and lessees
- Public outdoor recreational opportunities and the associated boost to rural economies from that use, through employment and user expenditures
- Bio-diversity and habitat benefits of maintaining healthier forests on properties under active management driven by stewardship rather than revenue maximization

This Principle also includes the issue of economic viability, more specifically the expectation that forest manager *strive toward* economic viability. While the long-term viability of the DNR's management of the state forests is incrementally threatened by ongoing and deepening budget cutback, it is nonetheless beyond any question that DNR has been exemplary in seeking to or striving to maintain viability in the face of these shortfalls. But there is a limit to how long the DNR can "make do with less" before the

overall program functionality suffers to a much more significant extent than as thus far been the case.

With respect to optimal use and local processing (Criterion 5.2), the audit team observed nothing that would raise a question of conformance to the standard. Likewise for minimization of waste and damage to residual trees (Criterion 5.3).

With respect to taking action to avoid dependence on a single forest product, we observe what we consider to be clearly adequate conformance. While there is little in the way of programmatic focus on non-timber forest products we do note the active minerals leasing program, though such activities generally do not fall under the rubric of "non-timber forest products" as envisioned by the FSC. And of course, the single most important non-timber forest product that has direct commercial value is outdoor recreation.

With respect to Criterion 5.6, we note that actual timber harvest levels are clearly below maximum sustainable levels in the classic sense of that term. But in the context of FSC certification, conservative harvest levels such as has been the norm on the state forests is very much a positive situation as it no doubt is associated with a much wiser and environmentally and socially exemplary balancing of timber and non-timber considerations than is typically associated with regimes oriented towards realizing maximum sustainable harvest levels. We know of very few if any state forest programs that view their mandate to be maximum timber production and we consider Michigan DNR's general perspective on the relative role of timber management to be enlightened.

Overall, it is our sense that a full evaluation would confirm adequate conformance to this Principle such that any observed gaps may result in the issuance of minor CARs but would not constitute a barrier to award of certification.

FSC Principle 6: Environmental Impact

This FSC Principle is elaborated by a set of 10 Criteria that focus on issues such as impact assessments, protection of listed species, biodiversity, reserve areas, stream-side and wetlands buffers, erosion control, exotic species, chemical use, high conservation value forests, and forest conversions. Of all the FSC principles, this one is the most expansive in scope, with an associated high level of emphasis on data and information collection and analysis. Collectively, the thrust of this principle manifests a clear bias towards the maintenance and restoration of natural forest conditions.

Comments and Observations:

Over the breadth of this expansive Principle, it is the audit team's preliminary judgment that DNR's management of the Michigan state forests is in reasonable conformance with Principle 6. At the field level, the auditors did not observe systematic and significant patterns where inappropriate levels of environmental impact are occurring

as a result of forestry operations. Indeed, we consistently observed circumstances indicating that forestry operations (e.g., timber harvests) are being carried out in a manner that avoids adverse impacts such as soil loss, rutting and compaction, watercourse degradation, damage to residual stands and non-timber vegetation, as well as loss of aesthetic quality. State forest resource management operations appear to be conducted in good harmony with the regional environmental settings in which they occur. And the management approaches do not substantially rely upon chemicals, exotic species or conversion of forested areas to non-forest cover.

With respect to Criterion 6.1, which addresses environmental impact assessments, it is our preliminary judgment that DNR has a mixed degree of conformance. On the one hand, the OI/compartment review process does incorporate various types of analyses and assessments that are consistent with the thrust of this Criterion. Likewise, there are some broader scale assessments such as the red pine project, river basin assessments, etc. that address resource issues at broader spatial and temporal scales. But on the other hand, there is clearly a lack of current forest-wide or ecosystem scaled management plans and the supporting environmental assessments that support and are incorporated into such plans. In the event of a full evaluation, it is likely that the audit team would identify a gap in this regard and, accordingly, issue a minor CAR aimed at accelerating the pace of development of these forest or ecosystem-level plans.

With regard to addressing threatened and endangered species issues (Criterion 6.2), we did not observe anything that would indicate a major gap. DNR actively coordinates this issue with the Michigan Natural Features Inventory, such as regular consultation in the context of compartment reviews. Additionally, DNR engages in major restoration efforts focused on selected species such as Kirtland's Warbler.

With respect to FSC Criterion 6.3, which focuses on the maintenance of ecological functions, it is our clear opinion that a full evaluation of the DNR's management of the Michigan state forests would lead to a conclusion that the program not only maintains but enhances ecological functions such as forest regeneration and succession, biological diversity, and natural cycles. That is, DNR's management regimes and policies generally are leading to ecologically healthier forests, over time, and relative to industrial norms.

Criterion 6.4 pertains to a representative system of reference areas. In the judgment of the audit team, there is a gap in conformance to this Criterion, specifically related the fact that the over decade-long old growth initiative (now reconfigured as a biodiversity initiative) has never been completed. As this process has dragged on, uncertainty has increased in the field with respect to the status of the project and the appropriate interim management measures for the candidate old growth areas that had been identified and mapped several years ago. Most field units are still deferring timber harvests in these candidate areas but some units have been conducting harvests in these areas, thereby rendering them irrelevant for future designation. There is a need for a reinvigoration of this stalled initiative.

Criterion 6.5 requires written guidelines to avoid environmental impacts. Further, the regional indicators associated with this Criterion speak to field conditions that should be observable in response to adherence to these written guidelines. With respect to written guidelines, the existence of Michigan forestry BMPs serves as strong indication of conformance to this Criterion. One area where a full evaluation may reveal a gap necessitating a Corrective Action Request is road maintenance (insufficient budgets to adequately maintain the road network) and management of ORV use on roads that are not being closed even if local managers wished that they could close such roads.

Criterion 6.6 focuses on chemical use; more accurately, the expectation that forest managers employ every effort to avoid and/or minimize chemical use. Further, there are certain chemicals that simply cannot be used on certified forests (WHO Type 1A and 1B chemicals). Generally, we are note that DNR uses very little in the way of chemical herbicides and pesticides across the majority of the state forest system. The most notable exception to this general pattern is the red pine plantations in the Northern Lower Peninsula. But, over the breadth of the state forests, we believe that there is a solid conformance to the "avoid and minimize" aspect of this Criterion.

However, and as is detailed in the Appendix to this report, DNR is currently using a few chemicals that are prohibited from use on FSC certified forests and that will have to be ceased prior to award of certification. If these chemicals are still in use at the time of the full evaluation, the audit team will be obligated to issue a Major CAR.

Criterion 6.7 deals with disposal of hazardous materials and, here, the audit team did not observe any significant nonconformance issues in the field.

In that biological control agents and/or genetically modified organisms (GMOs) are not employed on the Michigan state forests, Criterion 6.8 is largely non-relevant. Criterion 6.9 deals with the use of exotic species. It is our understanding that DNR does not employ exotic species, with the possible exception of grass mixes used to cover bare soil.

Finally, Criterion 6.10 deals with conversion of forests to non-forest uses. While there is some sales of state forest land because they are not viewed as strategically located, the land disposal program is quite limited. Of positive note, we were informed that revenues from such sales are used to acquire more strategic properties. The only conversion of forest land to non-forest cover is associated with restoration of endangered ecosystems such as pine or oak barrens and these types of conversions are not incompatible with this Principle.

Over the full scope of this lengthy and multi-subject Principle, it is our sense that a full evaluation would confirm adequate conformance to this Principle such that any observed gaps would not constitute a barrier to award of certification. However, it is quite likely that one or more CARs would be issued to address specific gaps such as with

regard to landscape level assessments, old growth/biodiversity, road maintenance, and chemical use.

FSC Principle 7: Management Plan

This Principle is elaborated through 4 Criteria, which collectively call for a very high level of commitment to management planning. A public summary of the management plan is required, as are regular updates to that public summary.

Comments and Observations:

It is in the context of this Principle that audit team concludes the most significant gap arises. While DNR employs a very effective and time tested tactical level planning process (the OI/compartment review process), strategic level planning at a large scale and over a long time frame is simply not on a par and, in fact, is clearly deficient relative to the FSC Standard. Put simply, DNR's needs to ramp up its efforts to develop strategic/landscape level plans to augment and guide the OI/compartment review process. For the past several years, DNR has been pursuing "eco-regional planning" as the mechanism and approach for generating landscape level plans. While the audit team clearly does not view eco-regional planning, as guided by the Lake Superior State Forest guideline document, to be the mandatory or only approach that will generate strategic/landscape-level plans in conformance with Principle 7, we believe that effective results can be achieved *if* the current initiative is supported by more resources and additional guidance to the field. Be it eco-regional planning or some other approach, the strategic/landscape level planning effort needs to be ramped up so that field units have the benefit of a new comprehensive plan at a date much earlier than is likely to be the case under the present level of emphasis and direction. Without such a ramped up effort, or at least strong commitments to do so within near-term, defined time frames, it is likely that the current state of strategic planning would in fact present a barrier to the award of FSC certification. That is, it is likely that a full certification evaluation would result in the issuance of one or more CARs related to Principle 7, with at least one being stipulated as a Major CAR.

We wish to make it clear that award of FSC certification would not be contingent upon completion of these strategic/eco-regional plans but, rather, on a tangible commitment and actions that will clearly accelerate the pace by which these plans will be completed.

In that the lack of current eco-regional plans (as they are known in the current DNR lexicon) is the salient circumstance defining the state of planning affairs relative to this Principle, it is somewhat pointless to focus too much on each Criterion. In short, conformance to both Criterion 7.1 (plan content) and 7.2 (periodic updates) requires a greater commitment to the timely completion of the eco-regional plans or functional equivalents developed through other approaches.

Criterion 7.3 addresses training of workers and employees so that the plan can be adequately implemented. We consider the DNR staff to be fully capable of implementing new eco-regional plans, once they are finalized. But until such time that new plans are issued, the existing plans are so out of date as to be largely considered by field units to be irrelevant and thus not implementable. This is somewhat less the case in the two units that had "forest-level" plans developed roughly 10 years ago, Traverse City and Escanaba.

Criterion 7.4 requires that a public summary of the management plan be made publicly available. As a public agency, all plans generated by DNR are, we assume, publicly available. The problem is not one of availability but of currency. Also of positive note, all other supporting documents generated by DNR, such as resources assessments and the special planning efforts such as the red pine project, are publicly available.

Overall, it is our sense that a full certification evaluation would not be able to confirm adequate conformance to this Principle without a ramped up commitment on the part of senior management at DNR to see the current eco-regional planning process, or another approach to strategic/landscape level planning, through to a much speedier completion than is currently likely to be the case.

FSC Principle 8: Monitoring and Assessment

As a conceptual and thematic companion to Principle 7, this Principle (elaborated through 5 Criteria) requires certified operations to engage in an aggressive and formal program of periodic monitoring of the impacts of management operations, focusing upon both bio-physical and socio-economic impacts as well as the extent of plan compliance. Chain of custody is also addressed within this Principle (Criterion 8.3).

Comments and Observations:

Criterion 8.1 requires forest monitoring *scaled to the size and intensity of operations*. In the context of DNR's management of the Michigan state forests, we consider the level of monitoring of forest conditions to be less than fully adequate, in large part due to the fact that Criterion 8.1 addresses a broad range of topics that DNR does not adequately cover. As a companion to the situation with respect to Principle 7, DNR needs to ramp up its systematic monitoring activities and to better link these monitoring activities with the plan revision process.

Criterion 8.2 addresses research and data collection and, here, we consider DNR's current level of monitoring effort to be insufficient to lead us to conclude adequate conformance. There is a need to broaden the scope of information and topics that are the subject of monitoring, such as social impacts, forest condition, sites of significance to neighboring tribes.

Criterion 8.3 deals with chain-of-custody. Here, we note that DNR sells standing trees and, as such, its CoC obligations are very limited. The main requirement is that DNR keep accurate records of all sales—volumes (estimates if that is all that is available), species, date of sale, name of purchaser. This information, as necessary, can play a key role in allowing FSC to reconcile the flow of certified material through the supply chain. But aside from this obligation, DNR can do a great service to the Michigan forest products industry by helping to educate the industry on its CoC obligations. Specifically, all purchasers of state forest timber will need to hold a CoC certificate or be expressly covered by another party's certificate *if the certified status of state forest timber is to be maintained once the timber leaves the forest.*

Criterion 8.4 requires that the results of monitoring be incorporated into management planning. Given the state of the management planning process, as detailed above, it stands to reason that the manner by which monitoring results are incorporated into management planning is likewise in a present state of inadequate conformance to this Criterion.

Criterion 8.5 requires a public summary of the results of monitoring activities. Here, we see a mixed current situation. While there is a need to expand the scope of monitoring activities, there are, on the other hand, mechanisms in place for sharing the results with the public.

Overall, it is our sense that a full evaluation would be unable to confirm adequate conformance to this Principle such that any observed gaps could constitute a barrier to award of certification in the absence of a ramped up effort by DNR to bring its monitoring activities more in line with what the FSC Standard requires.

FSC Principle 9: Maintenance of High Conservation Value Forests

This FSC Principle is elaborated upon through 4 Criteria that collectively focus on the identification and appropriate management of areas within the defined forest area(s) that possess notable attributes meriting conservation. Such attributes may be ecological or social, in nature. Areas of high conservation value are to be managed so that the defining attributes are maintained or enhanced; focused monitoring must be undertaken with respect to efficacy of HCVF management strategies.

Comments and Observations:

More so than perhaps any other Principle, P9 requires the certified landowner to engage in some explicit analyses that are not commonly undertaken without a solid knowledge of and commitment to the P&C. That is, P9 requires actions that are unlikely to have been undertaken by an operation not already certified. The reason for this is that the entire concept of *high conservation value forests* is somewhat of an odd fit to North American forest managers, at least in the terms used by the FSC and in the manner in which there is a need to engage in stakeholder consultation. Although we do not believe

that DNR's management of the state forests is resulting in the loss or degradation of areas meeting the FSC's definition of "high conservation value forests," the fact remains that P9 places some affirmative procedural obligations on forest managers to expressly address, obligations that DNR cannot adequately demonstrate it is meeting at this point in time without some sort of summary document. To be found in adequate conformance to P9, DNR will need to demonstrate in some sort of summary cross-reference presentation that it collectively addresses, in a reasonable and functionally equivalent form, the following activities:

- defining those attributes that merit designation as high conservation value
- determining the presence of HCVFs on the Michigan state forests, including some focused consultation with outside stakeholders[6],
- developing appropriate guidelines for the management of identified areas of HCVF
- developing monitoring protocols designed to assess the effectiveness of the HCVF management guidelines

It is our clear sense that DNR is already covering these basis, but in a format and employing terms that do not provide for a concise and comprehensive verification that P9 is being adequately addressed. But, when all is said and done, DNR must nevertheless provide a reasonable demonstration that it understands its obligations regarding Principle 9 and that it is taking appropriate actions to meet those obligations. This Principle is an area of deficiency for most FSC certified operations, at this point in time, and we do not expect that, at the time of award of certification, that a complete treatment of HCVF has been completed. But it will be necessary, for award of certification, that DNR demonstrate that it understands the expectations, has initiated a strategy, and is committed to completing the tasks in a reasonable time frame.

But again, it is our sense that DNR is already covering the necessary HCVF bases to a pretty decent extent but that it is just not covered under a single comprehensive process nor described in a single comprehensive document. To that extent, DNR's task is more one of compilation and exposition rather than additional substantive analytical work.

FSC Principle 10: Plantations

This FSC principle, elaborated through 9 Criteria, provides additional certification requirements specific to those operations where the nature and intensity of management practices and regimes is such that most, if not all, of the characteristics of a natural forest are absent. That is, plantations under the FSC use of the term are defined by the totality of the management regime, not on the means of stand establishment (e.g., clearcut and plant). The 9 Criteria address issues such as: plantation management objectives, diversity

[6] Despite what is said in a note in the Lake States Regional Standard under Criterion 9.2, the FSC has issued written guidance that clearly establishes its expectation that forest engage in stakeholder consultation as part of its treatment of HCVF.

in the composition of plantations, plantation design and layout, natural areas within the plantation operation, control of pests and pathogens, periodic monitoring and conversion of natural forest to plantations. In brief, areas supporting natural forest cannot be converted to plantations through the use of plantation forest management regimes.

Comments and Observations:

At issue is whether or not the type of forest management practiced on the Michigan state forest system constitutes "natural forest management" or "plantation forest management." Based upon a review of silvicultural prescriptions and practices as well as on-site inspections of managed forest stands on a cross-section of state forest units in both the lower and upper peninsulas, it is the clear judgment of the SCS audit team that forest management as practiced by DNR cannot be characterized as "plantation forest management" as defined by the FSC. The one possible exception to this conclusion is the red pine planted stands in the northern Lower Peninsula (Grayling Unit). Accordingly, Principle 10 would generally not be applicable if a full evaluation were to be conducted. However, the full evaluation will need to include an examination of the red pine planted stands in the Grayling Unit and with respect to those stands, only, Principle 10 may apply.

Final Comments

We would like to express our appreciation to the numerous Michigan DNR employees that interacted with the audit team over the 5-day audit, but particularly to Dennis Nesich and Larry Peterson for their central roles in planning for and helping to manage the audit process and to Bernie Hubbard and Bill Moritz for personally accompanying the FSC Lead Auditor during the 3 days of field auditing activity. The SCS audit team found the interactions with all staff to be highly professional and effective in acquiring a good understanding of the breadth and complexity of the state forest management operations. We are very impressed with the positive attitudes and stewardship ethic displayed by all employees with whom we interacted. The "negative" comments contained in this report should by no means be construed as an indictment of the Michigan DNR and the sometimes daunting job it is doing of managing a large state forest system that is subject to growing and oftentimes conflicting demands from the public. Our responsibility is to identify and discuss those aspects of a forest management operation that may not presently dove-tail well with requirements for certification under the Forest Stewardship Council. We believe that FSC-endorsed certification is well within the realm of attainability, and we hope that DNR decision-makers choose to proceed with FSC-endorsed certification, based upon internal and external/customer considerations.

APPENDIX 1: AUDIT TEAM

SCS Lead Auditor, Robert Hrubes

Robert Hrubes is Senior Vice-President of Scientific Certification Systems. In that capacity, Dr. Hrubes is responsible for all natural resource and recycled content certification activities of the company. While providing senior leadership of these programs, Dr. Hrubes remains an active certification practitioner. He continues to lead certification evaluation teams throughout the world as well as represent both SCS and FSC and numerous public fora. He is internationally recognized as a leading authority and practitioner of third-party forest management certification.

Prior to assuming his present duties at SCS in 2000, Dr. Hrubes owned and managed, for 6 years, a forestry and natural resource economics consultancy based in northern California. During those years, he served on the founding Board of Directors of the Forest Stewardship Council. Additionally, he served as the founding Chair, Board of Directors of the Forest Stewards Guild, a U.S.-based professional society of progressively minded practicing foresters. Previous to the creation of his own consultancy, Dr. Hrubes was for 6 years a managing principal of LSA Associates, Inc., a California-based environmental consulting firm. And prior to that, Dr. Hrubes was employed for 14 years by the USDA Forest Service in a variety of positions from field forester to research economist, operations research analyst and acting Group Leader for Land Management Planning.

Dr. Hrubes holds the following degrees:

Ph.D., Forest Economics, UC-Berkeley
M.A., Economics, UC-Berkeley
M.S., Resource Systems Management, Univ. of Michigan, Ann Arbor
B.S., Forest Management, Iowa State University, Ames

NSF-ISR Lead Auditor, Mike Ferrucci

Mike Ferrucci is the SFI Program Manager for NSF – International Strategic Registrations and is responsible for all aspects of the firm's SFI Certification programs. Mike has led Sustainable Forest Initiative (SFI) certification and precertification reviews throughout the United States. He has also led joint SFI and Forest Stewardship Council (FSC) certifications in Wisconsin, Maryland, Maine and Connecticut and scoping or precertification gap-analysis project throughout the United States. He is qualified as a RAB EMS Lead Auditor (ISO 14001 Environmental Management Systems), as a SFI Lead Auditor, as a FSC Team Leader, and as a Tree Farm Group Certification Lead Auditor.

Mike has conducted or participated in assessments of forest management operations throughout the United States, with field experience in Maine, New Hampshire, New York, Massachusetts, Connecticut, New Jersey, Maryland, West Virginia, Tennessee, Minnesota, Michigan, Wisconsin, Arizona, California, Oregon, and Washington. Mike is

a 26-year member of the Society of American Foresters. He is also active in the Association of Consulting Foresters and the Connecticut, Massachusetts, and Rhode Island SIC for the Sustainable Forestry Initiative.

Mike has 26 years of forest management experience. His expertise is in sustainable forest management planning; in certification and verification of forests as sustainably managed; in the application of easements for large-scale working forests, and in the ecology, silviculture, and management of mixed species forests, with an emphasis on regeneration and management of native hardwood species.

Mike is a founding partner and President of Interforest, LLC where he is responsible for the assembly and management of integrated teams of scientists and professional managers to solve complex forestry problems. Mike is also a Lecturer at the Yale School of Forestry and Environmental Studies, where he teaches courses and workshops in forest management, operations, professional forest ethics, private forestry, and financial analysis to graduate students.

David Capen, Team Member, Wildlife Biology and Ecology

Dr. David Capen is Research Professor, School of Natural Resources, University of Vermont. He is an expert in Wildlife Habitat Analysis, Avian Ecology, Landscape Ecology, Biodiversity Analysis, GIS and Remote Sensing, Multivariate Statistics, and Conservation Planning and Reserve Design.

He holds the following degrees:

University of Tennessee, B.S.F., 1969 (Forestry)
University of Maine, M.S., 1972 (Wildlife Management)
Utah State University, Ph.D., 1977 (Wildlife Science)

Dr. Capen has participated in a variety of forest certification projects, including SFI and FSC projects on state lands. His certification projects include the following:

SFI Forest Certification, Audit Team, State of Maine, for NSF-ISR
FSC Forest Certification, Audit Team, State of Massachusetts, for SCS
SFI Forest Certification, Audit Team, Harden Furniture, for NSF-ISR
SFI Forest Certification, Audit Team, Finch-Pryne Co., NY, for The Plum Line
SFI Forest Certification, Audit Team, Seven Islands Land Co., Maine, for The Plum Line
FSC Forest Certification, Peer reviewer, Maine Bureau of Public Lands, for Scientific Certification Systems (SCS)
FSC Forest Certification, Peer reviewer, Yale-Meyers Forest, Conn., for SCS

APPENDIX 2: ANNOTATED COMMENTS RELATIVE TO THE FSC LAKE STATES REGIONAL STANDARD

In ascertaining conformance with the FSC Principles and Criteria of Forest Stewardship (as further elaborated by the Lake States Regional Standards), audit teams compare observed performance against a set of *performance indicators*. Since the Lake States Regional Standard is duly endorsed by the FSC, the indicators contained therein form the basis of comparison.

Non-conformance with a single indicator does not prevent the issuance of a certificate. Only when, in the judgment of the audit team, there is non-conformance with the breadth of a criterion (of which there are 56 within the P&C) is a pre-condition stipulated that must be cleared prior to award of certification. If a forest management operation is determined to be in non-conformance with an indicator, a Corrective Action Request (CAR) is then stipulated and attached to the award of certification.

Below, we offer indicator specific feedback on whether the State Forest Program would likely meet the performance indicator (conformance or non-conformance). Indicators that are (*not applicable*) are marked such. Many indicators, at least at this stage, are assessed in checklist fashion with no additional discussion.

Lake States-Central Hardwoods Region (USA)
Regional Forest Stewardship Standard Field Sheet
Version LS Final

Note: this document omits applicability notes and examples found in the full standard.

Annotation Guide:

"C"	**likely to be found in conformance with the Criterion**
"NC"	**likely to be found in non-conformance with the Criterion**
"C/NC"	**at the margin of conformance with the Criterion**
"+"	**likely to be found in conformance with the Indicator**
"-"	**likely to be found in non-conformance with the Indicator**
"+/-"	**at the margin of conformance with the Indicator**

Requirement	C/NC	Comment/CAR
P1 Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.		
C1.1 Forest management shall respect all national and local laws and administrative requirements.	**C**	
1.1.a. Forest management plans and operations comply with applicable Federal, state, county, tribal, and municipal laws, rules, and regulations.	+	• An internal review of legal compliance that was made available to the audit team via CD revealed a strong record of legal compliance. For instance, there have been DEQ violations in the past 5 years. • No current lawsuits pertaining to state forest management
1.1.b. Forest management plans and operations comply with state Best Management Practices (BMPs) (see Appendix for references) and other government forest management guidelines applicable to the forest, both voluntary and regulatory (see also Criterion 6.5)	+/-	• No observed patterns of non-compliance with Michigan BMPs. • Greater effort could be paid to assuring that logging contractors understand and conform to pertinent BMPs. • Generally, BMP monitoring is not sufficient regular; last formal review was over 3 years ago
1.1.c. Forest management plans and operations meet or exceed all applicable laws and administrative requirements with respect to sharing public information, opening records to the public, and following procedures for public participation.	+	• We were informed that Sierra Club has resorted to Freedom of Information Act requests to obtain some specifically sought information in recent years, it is our general sense that DNR is doing a good job of providing public access to information and records
C1.2. All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.	**?**	
1.2.a. Taxes on forest land and timber, as well as other fees related to forest management, are paid in a timely manner and in accordance with state and local laws.	+/-	• We are unclear as to the details behind this statement found in the "FSC 7-17-03" Word document that was on the CD conveyed to the auditors: MDNR had said it would not pay summer, 2003, PILTs, ad valorem, etc., taxes. Previously OK. Does this mean that DNR is opting not to pay certain financial obligations because of budget shortfalls? We will need to look into this during the full evaluation
C1.3. In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.	**C**	
1.3.a. Forest management operations comply with all binding treaties or other agreements to which the U.S. is a party, including treaties with American Indian tribes.	+	• As with most forestland managers in the U.S., it is doubtful if DNR fully is knowledgeable about all potentially applicable treaties and conventions. ITTA is not relevant but ILO could be. This potential lack of full awareness notwithstanding, we have seen no evidence to suggest that DNR would be considered to be in non-conformance to this Indicator and Criterion.
C1.4. Conflicts between laws, regulations and the FSC Principles		

and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and by the involved or affected parties.		
1.4.a. Where conflicts between laws and FSC Principles and Criteria occur, they are referred to the appropriate FSC body.	-	Conformance with this indicator would be demonstrated through development of a written policy that would go into effect upon award of certification, stating the MDNR would bring any such conflicts to the attention of SCS. **Note that this does not suggest or require that DNR cede any authorities over to FSC, only that it bring to attention of the certifier any situations where DNR believes that legal obligations conflict with FSC requirements.**
C1.5. Forest management areas should be protected from illegal harvesting, settlement and other unauthorized activities.	C	
1.5.a. Forest owners or managers implement measures to prevent illegal and unauthorized activities in the forest.	+	• Unauthorized ATV use is actively controlled
C1.6. Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.	C	• The audit team was informed that there is a strong commitment to achieving certification on the part of top management of the Department • A bill was passed in the Michigan state legislature mandating achievement of certification on the state forests within a specified time period • DNR is already committed to undergo a full certification audit, pending the outcome of the scoping assessment • Indicative of DNR's commitment, it has created a forest certification team that is actively engaged in the process • A substantial percentage of DNR/FMFM employees have undergone a certification training session • On the other hand, DNR is not yet certified and it has not yet made a formal commitment to manage the state forests in conformance to the FSC Principles & Criteria, as further elaborated by the Lake States Regional Standard
1.6.a. Forest owners or managers notify certifiers of changes in ownership and/or management planning.	-	Conformance with this indicator would be demonstrated through development of a written policy that would go into effect upon award of certification, stating the MDNR inform SCS within a specified time period of any changes in ownership and/or management planning. It would be acceptable if this protocol involved two time frames for notifying SCS about changes in ownership or management planning: • For significant/major developments, DNR informs SCS within a specified but relatively short time period such as 15 days • For minor developments such as normal land transactions – leases, easements, non-major land exchanges, etc., DNR maintain a register or log of such transactions, a summary of which is conveyed to SCS at the time of the annual surveillance audit
P2 Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.		
C2.1. Clear evidence of long-term forest use rights to the land (e.g., land title, customary rights, or lease agreements) shall be demonstrated.	C	
2.1.a. Forest owners or managers document the legal and customary rights associated with the forest. These rights include both those held by the party		• Unlike other regions of the world, and particularly so for publicly-owned forestland, there is no question as to the tenure status of the Michigan state forest system

seeking certification and those held by other parties.	+	
2.1.b. Affected land boundaries are clearly identified on the ground by the forest owner or manager prior to commencement of management activities.	+/-	• Timber sale boundaries are flagged when such boundaries abut other ownerships. We are not certain if the same practice applies for any other sorts of land disturbing activities but, then again, it is not apparent to us that there are other significant land disturbing activities aside from timber harvesting.
C2.2. Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.	**C**	
2.2.a. The forest owner or manager allows legal and customary rights to the extent that they are consistent with the conservation of the forest resource and the objectives stated in the management plan.	+	• Customary recreational uses are accommodated and managed in an exemplary manner • Other uses such as oil & gas and sand & gravel are allowed under effectively administered leasing frameworks
2.2.b. On ownerships where customary use rights or traditional and cultural areas/sites exist, forest owners or managers consult with concerned groups in the planning and implementation of forest management activities.	+	• There are numerous mechanisms, including but not limited to open houses and compartment reviews, through which DNR personnel interact with concerned and affected stakeholders
C2.3. Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.	**C**	• The court system provides an appropriate mechanism for final resolution.
2.3.a. The forest owner or manager maintains relations with community stakeholders to identify disputes while still in their early stages. If disputes arise, the forest owner or manager initially attempts to resolve them through open communication, negotiation, and/or mediation. If negotiation fails, existing local, state, Federal, and tribal laws are employed to resolve claims of land tenure (see Glossary).	+	• District supervisors get involved in dispute resolution
2.3.b. The forest owner or manager provides information to the certification body regarding unresolved and/or ongoing disputes over tenure and use-rights.	-	• Such a protocol has yet to be developed. Providing a summary/status report as part of the annual surveillance audit would be sufficient. DNR should exercise discretion in determining if SCS should be informed about any single case prior to the next surveillance audit, but generally only highly visible and controversial circumstances would warrant informing SCS prior to the surveillance audit.
P3 The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.		
C3.1. Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies.	**NA**	
3.1.a. On tribal lands, forest management and planning includes a process for input by tribal members in accordance with their laws and customs.		

3.1.b. Forest management on tribal lands is delegated or implemented by an authorized tribal governing body.		
C3.2. Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.		
3.2.a. Forest owners or managers identify and contact American Indian groups that have customary use rights or other legal rights to the management area and invite their participation in the forest planning processes, appropriate to the scale and intensity of the operation. (see also Criterion 4.4.)	+/-	• Jim Ekdahl is the senior responsible party for interacting with tribes, but more at the policy and programs level rather than project level • (-) Formal interactions with tribes is primarily limited to fishing rights • (+) The public noticing process for compartment reviews and other planning functions includes sending notice to potentially affected tribes; DNR's outreach to the tribes could be more affirmative and culturally appropriate. That is, to employ mechanisms which are more likely to generate response and dialogue because these mechanisms are more compatible with Native American cultural norms. For instance, standard written public notices published in local newspapers are not likely to be efficacious in generating tribal response and dialogue. Alternatively, and more affirmatively, face to face meetings or telephone calls may be better received by tribal representatives.
3.2.b. Steps are taken during the forest management planning process and implementation to protect tribal resources that may be directly affected by certified operations such as adjacent lands, bodies of water, critical habitats, and riparian corridors as well as other resource uses such as rights to hunt, fish, or gather.	+	• Public notification processes include notices being sent to potentially affected tribes • The compartment reviews include consultation with the Department of History, Arts and Libraries (HAL)—coordinates for sites of planned site disturbing activity (principally timber harvesting and mineral leasing) are conveyed to the Environmental Review Coordinator at the Michigan Historical Center in Lansing • DNR has hired historical researchers
C3.3. Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.	C	• DNR is fully aware and conforms to federal and state laws and treaties regarding the protection of tribal resources
3.3.a. Forest owners or managers make systematic efforts to identify areas of cultural, historical, and/or religious significance. They invite participation of tribal representatives (or other appropriate persons, where tribal entities are lacking) in the identification of current or traditionally significant sites within the forest proposed for certification.	+	See observations under 3.2.b • In the event of accidental damage to significant sites, the SHPO is notified through established procedures
3.3.b. Forest owners and managers consult with tribal leaders (or other appropriate persons, where tribal entities are lacking) to develop mechanisms that ensure forest management operations protect from damage or interference those areas described in 3.3.a. and incorporate these special places into forest management and operational plans.	+/-	• While there is interaction and consultation with tribes at the broad regional and statewide level, we are uncertain as to the extent to which active consultation and dialogue takes place at the operational and project level
3.3.c. Confidentiality of disclosures is maintained in keeping with applicable laws and the requirements of tribal representatives.	+	• Applicable statutes and regulations are followed

C3.4. Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.	**NA[7]**	
3.4.a. Forest owners or managers respect the confidentiality of tribal knowledge and assist in the protection of tribal intellectual property rights.		
3.4.b. A written agreement with individuals and/or tribes is reached prior to the commercialization of forest products based on rights of indigenous intellectual property.		• We assume that DNR is not associated with any such commercialization
P4 Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.		
C4.1. The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.	**C**	
4.1.a. Opportunities for employment, contracting, procurement, processing, and training are as good for non-local service providers as they are for local service providers doing similar work.	+	• While there is no formal preference policy or program for local versus non-local service providers, the contract bidding process is well structured and open. Most service providers are local or regionally based. Most timber purchasers are from the local region.
4.1.b. Forest work is packaged and offered in ways that create quality work opportunities for employees, contractors, and their workers.	+	• State employment packages certainly conform to this indicator. The average employee tenure is quite long compared to private industry; job security is a bigger draw than salary. The few contractor employees we had a chance to speak with voiced general satisfaction with their work situation.
4.1.c. Forest owners or managers contribute to public education about forestry practices.	+	
4.1.d. Forest owners or managers participate and invest in the local economy and civic activities.	+	• With state forest units spread throughout the state and with local offices and work centers likewise located throughout the state, the DNR workforce is fully integrated into the rural communities and smaller cities of the northern lower peninsula and upper peninsula.
4.1.e. Employee compensation and hiring practices meet or exceed the prevailing local norms for work within the forest industry that requires equivalent education, skills, and experience.	+	• DNR salaries are slightly less than private forestry salaries but benefits (including but not limited to job security) are superior and, as evidenced by the long average DNR tenure, the overall employment package is competitive
4.1.f. Forest owners or managers assure that contractors, subcontractors, intermediaries, and persons hired by them are covered and protected by all state and Federal labor laws regarding discrimination, wages, benefits, and other conditions of employment.	+/-	• All contractors (timber purchasers) must have worker's comp and liability insurance • We are not aware if the standard timber sale contract includes language requiring that contractors comply with all applicable laws such as related to discrimination, wages, benefits, conditions of employment. If there is such a contract clause, then the assessment for this indicator is "+" rather

[7] A question mark after "NA" was included in the draft version of the report because, while we consider it unlikely that DNR is employing traditional knowledge regarding the use of forest species or management systems, we are not totally certain. DNR's response to the draft report indicates that DNR does not believe that this Criterion is applicable because the DNR is not employing traditional knowledge such that compensation is an issue. We accept that response.

		than "+/-"
C4.2. Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.	**NC**	• There is inadequate attention to safety on the part of woods workers, such as chain saw operators
4.2.a. The forest owner or manager and their contractors develop and implement safety programs and procedures.	**-**	• We are not aware of any formal program established by or administered by DNR that focuses on logger safety. • On the positive side, the Timberman's Association does operate a training and inspection program but we observed circumstances in the field where loggers were clearly not complying with even minimal safety practices • We believe that conformance to this indicator has a good likelihood of being confirmed in a full evaluation if the following steps are taken: o MDNR requires SFI logger training via a program such as the "Sustainable Forestry Education" (SFE) program run by Michigan State University's Cooperative Extension Service o MDNR conscientiously monitors and reports violations of safety regulations to MIOSHA
C4.3 The rights of workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labour Organization (ILO).		• DNR non-supervisory employees are unionized, which serves as strong evidence of employee rights to organize
4.3.a. Forest workers are free to associate with other workers for the purpose of advocating for their own employment interests.	**+**	• Michigan state law and federal law clearly provides for this
4.3.b. Forest owners or managers and their contractors develop effective and culturally sensitive mechanisms to resolve disputes between workers and management.	**+/-**	• Yes for DNR employees; not so clear for contractors, in terms of cultural sensitivity; DNR generally adopts a "hands off" approach to these types of contractor matters, instead invoking state and federal laws. This is fine provided that there is in fact compliance with these legal mandates. Who checks if it isn't DNR? • Inclusion of a timber sale contract provision requiring contractors to comply with all applicable state and federal regulations regarding dispute resolution between workers and management would likely establish adequate conformance to this indicator, as confirmed in a full evaluation.
C4.4. Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups directly affected by management operations.	**NC**	• The absence of a formal and cohesive social impact assessment process that is integrated into tactical and strategic decision-making appears to constitute a gap relative to this criterion[8] • While the OI Manual, Chapter 1, mentions that social information is collected, the extent to which this is actually occurring is not clear to us; likewise, it is not clear just what use this information, if collected, is put to

[8] We acknowledge in DNR's response to the draft report that it believes that social impact assessments are being conducted, by various means and mechanisms, perhaps to an extent that constitutes conformance to this Criterion. Nonetheless, the auditors are not convinced that the current manner and methods by which social impacts are assessed is sufficiently structured and consistently applied. We also note that the strategic-level procedures, as memorialized in the guidance document for the Lake Superior State Forest eco-regional planning effort is largely not yet implemented, certainly on all of the other eco-regions but also in the Eastern Upper Penninsula eco-region. While the EUP ecoteam has developed social indicators, we are not aware of their operational use. In the face of these differing viewpoints, DNR should be prepared to demonstrate to the full evaluation team, in a focused and comprehensive manner, the extent to which assessment of social impacts is incorporated into management planning and operations.

4.4.a. On lands with multiple owners, a process is provided that assures the opportunity for fair and reasonable input from the landowners and/or shareholders.	+	• Citizens of Michigan as well as recreational users from around the Lake States region have well established means and opportunities to provide input
4.4.b. Input is sought in identifying significant sites of archeological, cultural, historical, or community importance, that are to be designated as special management zones or otherwise protected during operations.	+	• Direct consultation with tribes regarding archeological and cultural resources is not as fully developed as it could be
4.4.c. Viewpoints and feedback are solicited from people and groups directly affected by forest management operations and its associated environmental and aesthetic effects (e.g., logging, burning, spraying, and traffic). Significant concerns are addressed in management policies and plans.	+	• The Recreation & Trails Section of FMFM utilizes advisory boards and committees to interact with to interact with user groups: snowmobile advisory group, ATV advisory group, recreation trails advisory committee
4.4.d. Forest owners or managers of large and mid-sized (see Glossary) forests provide opportunities for people directly affected by management operations to provide input into management planning.	+	• Open houses and public access to compartment reviews are directly responsive to this indicator
4.4.e. For public forests, consultation will include the following components:	+/-	• The principal gap is related to the public's ability to provide strategic-level, large scale-level input, due to the fact that DNR has a very evolved tactical planning system (compartment reviews) but is commensurately lacking in strategic level planning systems
1. Legislative and historical mandates are included in the plan, and provisions are made for their accomplishment.	+	• Legislative mandates are part of the LSSF template and of older-generation long-range plans
2. Clearly defined and accessible methods for public participation are provided in both the strategic (long-range) and tactical (short-range) planning processes, including initial adoption and subsequent amendments.	+/-	• Tactical level public participation is much more integrated into standard operating procedures • Some stakeholders have expressed dissatisfaction with the public participation methods that have been employed in the strategic/long-range planning process • The protracted delays in strategic planning means that strategic-level public participation is not as regular/frequent as it could/should be.
3. Public notification is sufficient to allow interested citizens of the affected jurisdiction and/or other people and groups directly affected by management operations the chance to learn of upcoming opportunities for public review and/or comment on the proposed management.	+	• The public notice process for compartment reviews appears to be functioning in a manner that meets stakeholder expectations, at least for local stakeholders. Environmental NGO reps express some dissatisfaction with the notice process • On the negative side, open houses are not well attended; this should be viewed by DNR as an indication that other methods should be considered or that the manner used for encouraging participation in the open houses needs to be modified
4. The final planning decisions are based on legal mandate, public input, credible scientific analysis, and the productive capacity of the land and are made by professional employees, hired by the public, or other legally authorized parties.	+	• Clearly, DNR decisions are based upon deliberative processes grounded in governing regulation and statute, decisions exercised by a staff of professional trained natural resource professionals
5. An accessible and affordable appeals process to planning decisions is available.	+/-	• DNR has submitted the following summary of the appeals process for planning decisions: o Operations Inventory provides a formal appeal process. ▪ Appeal to District Supervisor. ▪ Final appeal to DNR deputy director. o NRC on policy issues. o Appeals to the legislature or governor. o Courts and legislature as the final arbitrator. This summary appears to pertain only to "tactical level" planning decisions but despite that limit, we acknowledge that it does provide an avenue for citizens to pursue relieve for concerns over the actions

		taken as part of the OI process. During the full evaluation, DNR is encouraged to provide additional information that would help to better demonstrate conformance to this Indicator, particularly with respect to strategic-level planning decisions, and with an eye to specifically demonstrating that existing mechanisms are "accessible and affordable."
C4.5. Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.	**C**	
4.5.a. The forest owner or manager attempts to resolve grievances and mitigate damage resulting from forest management activities through open communication and negotiation prior to legal action.	+	• Throughout the field units, we observed a mindset of openness with respect to users, user groups, neighbors and the local communities • We were impressed with the effective means by which DNR resolves internal "disputes" or differences of professional opinion regarding resource management issues; the Eco-teams eventually can serve as mediators
4.5.b. Forest owners or managers and their contractors have adequate liability insurance.	+	• Workers comp and liability insurance is a mandatory requirement for all contractors
P5 Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.		
C5.1. Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.	**C/NC**	• The issue that raises doubt about the level of conformance to this Criterion is the ongoing budgetary shortfalls and the effects these cuts are having on the management programs and the capacity of the DNR to manage this complex, high-use land base
5.1.a. The forest owner or manager is willing and able to support long-term forest management (i.e., decades rather than quarter-years or years), such as planning, inventory, resource protection, and post-harvest management activities.	+	• Clearly, DNR is a long term manager of a state forest system that will remain in state ownership • However, continuing budget shortfalls and ongoing staff shortages undermines this commitment and historical track record
5.1.b. Responses (such as increases in harvests or debt load) to short-term financial factors (such as market fluctuations and sawmill supply requirements) are limited to levels that enable fulfillment of the management plan.	+	• DNR harvests are quite stable and not subject to short-term market pressures
5.1.c. Investment and/or reinvestment in forest management are sufficient to fulfill management objectives and maintain and/or restore forest health and productivity.	+/-	• Due to ongoing budget reductions, fewer people are managing larger areas; additional budget reductions will likely lead to management losses of some form • Facilities budgets are below needed levels (reported by one unit to be 20% of needed levels); communication systems in some field units are very old and are felt by employees in those units to be

[9] We note the following examples of investment effort that DNR submitted in its response to the draft version of this report:

- A notable forest health program with entomologists on staff.
  - Tree Improvement center in Brighton
  - Wyman Nursery in Upper Peninsula.
  - Forest fire experiment station.

		of limited usefulness. Most field units have very limited budgets for road maintenance unrelated to pending timber sales; full and effective maintenance of the road system requires higher funding levels than what is presently available (roughly $400,000 for 3.7 million acres of forest land).[9]
C5.2. Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.		
5.2.a. Opportunities are given to local, financially competitive, value-added processing and manufacturing facilities.	+	• There is no such preferential policy, but in fact most timber purchased off of the state forests is processed locally/regionally • DNR does not track timber sales by local versus non-local purchasers, which hinders monitoring relative to this Indicator
5.2.b. When non-timber products are harvested, the management and use of those products is incorporated into the management plan.	+/-	• It is not clear to us that non-timber resource utilization is covered in either tactical or strategic planning
5.2.c. New markets are explored for products from common but underutilized forest species.	+/-	• There doesn't appear to be an active effort at exploring/developing new markets for underutilized species, though DNR field managers do track and try to take advantage of chip markets; no tree species are left in the woods because of a lack of a market for that species
C5.3. Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.	C	• There was very little evidence of excessive waste or residual stand damage observed during the field audits.
5.3.a. Adequate quantities and a diversity of size classes of woody debris (considered a reinvestment of biological capital under this criterion—not an economic waste) are left on the forest floor to maintain ecosystem functions, wildlife habitats, and future forest productivity.	+	• Plenty of residual woody debris in most harvest units that were visited, though there was some variation. Inadequate woody debris was an issue in some red pine plantation harvest sites.
5.3.b. The loss and/or waste of merchantable forest products is minimized.	+	• Very little wastage was observed during field visits
5.3.c. Harvest practices minimize residual stand damage.	+	• BMPs, contract terms and timber sale oversight by field personnel collectively result in operations taking place well within reasonable limits for residual stand damage
C5.4. Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.		
5.4.a. Forest management diversifies forest uses and products, while maintaining forest composition, structures, and functions.	+	• There is an exemplary level of diversity of forest uses associated with the Michigan state forests. E.g.: timber production, outdoor recreation, oil & gas leasing, sand & gravel leasing

- Forest regeneration programs.
- Reforestation assessments.
- Reforestation assessments at the next inventory.
- Regular timber sale inspections and TS completion reports.
- Cultivation program is a long term investment.
  - Site prep, prescriptions in process, tree planting, tree planting records, regeneration checks.
- Recreational bond program.

These positive examples of investment in the management of the Michigan State Forests notwithstanding, we believe that the ongoing budget reduction context in which MDNR operations means that conformance to this indicator is likely at the margin, as connoted by the "+/-"

C5.5. Forest management operations shall recognize, maintain, and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.	**C**	• Beyond question, DNR policies are oriented towards maintaining and enhancing the full suite of forest services and resources such as watersheds and fisheries; timber management is clearly not being pursued at the expense of other forest services
C5.6. The rate of harvest of forest products shall not exceed levels that can be permanently sustained.	**C**	• Clearly, harvest levels are below maximum yield, appropriately so in the context of a state forest system with a mandate to provide for a suite of services and uses
5.6.a. The sustainability of harvest levels is based on growth and regeneration data, site index models, soil classification, and/or desired future conditions. The required level of documentation is determined by the scale and intensity of the operation.	+	• The Operations Inventory system is time tested and capable of accurately tracking standing inventory and growth • DNR is in the process of changing over to the IFMAP system, though the pace of transition is quite slow • The Y.O.E./10-year cycle approach to tactical level planning appears to function very well; the issue is the lack of current strategic plans to which the tactical planning is tiered
5.6.b. After the species composition and the age-class (see Glossary) distribution commensurate with long-term sustainability have been achieved, harvest and growth records demonstrate that the volume harvested during any 10-year span is less than the net growth accumulated over that same period. Exceptions to this constraint may be granted to forest owners or managers whose periodic cycle of re-entry is longer than 10 years. In such cases, allowable harvest is determined by examining the volume of re-growth and removal since the previous harvest and the forest owner or manager's commitment to allow an equivalent amount of re-growth before additional harvests.	+	• This indicator is largely irrelevant to Michigan DNR's timber management program
5.6.c. If rates of harvest are temporarily accelerated to compensate for or prevent unacceptable mortality, or in cases of salvage operations (see Indicator 6.3.c.4), the rate of future harvest is recalculated accordingly to meet desired future conditions, and the adjusted rate of harvest is implemented within three years of the temporary acceleration.	+	• Allowable harvest determinations are recalculated at sufficient frequencies to adequately incorporate the effects of such events
P6 Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.		
C6.1. Assessments of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources -- and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.	**C**	• There is a gap with respect to landscape level considerations due to the lack of current forest-wide plans and the slow pace in developing a new generation of plans
6.1.a. Using credible scientific analyses and local expertise, an assessment of current conditions is completed to include: • Disturbance regimes and successional pathways; • Unique, vulnerable, rare, and threatened communities; • Common plants, animals, and their habitats;	+/-	• Eight "river assessments" have thus far been completed • These assessments are optional for consideration by the FMFM Division personnel but field biologists bring these assessments into the mix through their participation in compartment reviews • Only a small proportion of the state forests fall within these 8 river assessment areas • Water resources are very actively assessment for condition

• Sensitive, threatened, and endangered species and their habitats; • Water resources; and • Soil resources (see also Indicators 7.1.a and b).		• We are not aware of formal assessments of soil resources
6.1.b. Using available science and local expertise, the current ecological conditions are compared to both the historical conditions and desired future conditions within the landscape context. This comparison is done by employing the baseline factors identified in 6.1.a.	+/-	• We are not aware of a formal assessment that is directly responsive to this Indicator, particularly in the context of compartment reviews. However, it is our sense that in a more de facto manner, DNR is broadly endeavoring to understand current ecological conditions on the state forests relative to historical/pre-settlement conditions. At the time of the full evaluation, it would be helpful if DNR could provide a concise summary of the various actions it undertakes that respond to this Indicator
6.1.c. Prior to the commencement of management activities, potential short-term environmental impacts and their cumulative effects are evaluated.	+	• Compartment reviews provide a substantive mechanism for assessing tactical level impacts and cumulative effects, though the assessment of cumulative effects is not on a par with site-level impact assessment • Fisheries Division personnel participate in compartment reviews • Wildlife Division personnel participate in compartment reviews, more regularly than does the Fisheries Division • Both the Fisheries and Wildlife Divisions have "sign off" authority for timber sales • The fact that the Divisional boundary lines "don't match up" across divisions detracts from optimal coordination and collaboration
6.1.d. Using assessments derived from the above information, management options are developed and implemented to achieve the long-term desired future conditions and ecological functions of the forest (see also Criterion 7.1).	+/-	• While not elaborated formally, it is our sense that the compartment review process does result in the informal consideration of alternative approaches for achieving local unit objectives • Alternatives elaboration and analysis is part of forest/landscape level planning, but the process is not sufficiently active to merit conformance
C 6.2. Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping, and collecting shall be controlled.	C	• DNR has a full fledged approach to endangered species management (e.g., Kirtland Warbler) • The Division of Wildlife is formally a "co-manager" of the state forests • The Kirtland Warbler project in the Grayling Unit serves as a good example of the efforts to manage for the maintenance of critical endangered species habitat, in conformance with this Criterion • State forest lands have not been thoroughly or systematically surveyed for the rare elements of natural diversity (including threatened and endangered species, and high quality natural communities).
6.2.a. Although species that are state and/or Federally listed as threatened, endangered, of special concern, or sensitive, and their habitats are identified, their specific locations remain confidential.	+	• DNR/FMFM operates in active collaboration with MNFI including protocols on location availability
6.2.b. If scientific data indicate the likely presence of state and/or Federally listed as threatened, endangered, of special concern, or sensitive populations, either new surveys are carried out before field-management activities begin or the forest owner or manager assumes their presence and makes appropriate modifications in forest management.	+	• DNR generally manages the state forests in a manner that is unlikely to harm T&E species and it relies upon the database, managed by the Division of Wildlife in collaboration with MNFI, which houses some 12,000 records, and which is queried as part of compartment reviews
6.2.c. For management planning purposes, forest owners or managers of publicly owned and large privately owned forests use, participate in, or carry out on-the-ground assessments for the occurrence of state and/or Federally listed as threatened, endangered, of special concern, or sensitive species.	+	• While there has not been a comprehensive, system-wide assessment, the working relationship with MNFI would appear to be adequately responsive to this Indicator
6.2.d. Where they have been identified, state and/or Federally listed as		• Division of Wildlife biologists that we interviewed are satisfied with the overall level of FMFM

threatened, endangered, of special concern, or sensitive species and their habitats are maintained and/or restored. Multiple-use management activities are acceptable, where the law allows, in these species' habitat areas to the extent that they are compatible with maintenance and restoration of the species.	+	• Divisional attention paid to endangered species and their habitats
6.2.e. If a state and/or Federally listed as threatened, endangered, of special concern, or sensitive species is determined to be present, its location is reported to the manager of the species' database.	+	• Yes, the collaboration with MNFI assures conformance to this Indicator
C6.3. Ecological functions and values shall be maintained intact, enhanced, or restored, including: a) Forest regeneration and succession. b) Genetic, species, and ecosystem diversity. c) Natural cycles that affect the productivity of the forest ecosystem.	**C**	
C6.3.a. Forest regeneration and succession	+	
6.3.a.1. Forest owners or managers make management decisions using credible scientific information (e.g., site classification) and information on landscape patterns (e.g., land use/land cover, non-forest uses, habitat types); ecological characteristics of adjacent forested stands (e.g., age, productivity, health); species' requirements; and frequency, distribution, and intensity of natural disturbances.		• Clearly, management of the state forests is undertaken by professionals employing scientifically sound methods and relying upon a large body of empirical and research-based information. • We do not have a strong sense as to the extent that DNR is considering ecological characteristics on adjacent lands
6.3.a.2. Silvicultural practices encourage regeneration that moves the forest toward a desired future condition, consistent with information gathered in 6.3.a.1.	+	• Natural regeneration is the predominant method employed and our field observations revealed consistently good regeneration of desired species. Where natural regeneration is found to be inadequate, planting takes place. • Post-harvest assessment of adequacy of natural regeneration may not occur for 5 years or more which is less than optimal
6.3.a.3. Measures are taken to ensure the retention of endemic and difficult-to-regenerate species.	+	• Species such as white pine which are limited in their presence in most managed stands are generally retained
6.3.a.4. Across the forest, or the landscape in which it is located, management actions lead to a distribution of successional stages, age classes, and community types appropriate to the scale and intensity of the operation and desired future conditions.	+/-	• The old growth, now biodiversity, initiative has been in process for 14 years, a protraction with no compelling justification; conformance to this indicator would be enhanced by an accelerated pace and increased effort to achieve final results
6.3.a.5. When even-aged management (see Glossary) is employed, live trees and native vegetation are retained within the harvest unit in a proportion and configuration that is consistent with the characteristic natural disturbance regime in each community type (see Glossary). Exceptions may be allowed when retention at a lower level is necessary for purposes of forest restoration and/or rehabilitation or to maintain community types that exist on the site (e.g., oak-hickory, jack pine). The level of retention increases proportionally to the size of the harvest unit.	+/-	• There is no manual guidance for green tree retention in clearcuts; but there is retention that is occurring, based on site-specific factors and individual discretion • "Final harvests are not the same as 10 years ago"
C6.3.b. Genetic, species, and ecosystem diversity		
6.3.b.1. Forest management conserves native plant and animal communities and species.	+	• There is no evidence to suggest that DNR policies fail to conserve native plant and animal communities and species

6.3.b.2. The forest owner or manager cooperates with local, state, and Federal agencies to protect and manage native plant and animal communities and species.	+	• Solid cooperation with Divisions of DNR and with federal agencies
6.3.b.3. There is a consistent scientific method for selecting trees to plant, harvest and retain in order to preserve and/or enhance broad genetic and species diversity.	+	• The Kotar habitat typing system is employed for species selection • There is ongoing field training in the Kotar system • We observed no instances of inappropriate species selection for planting
6.3.b.4. Forest owners or managers maximize habitat connectivity to the extent possible at the landscape level (e.g., through an ecological classification system, at the subsection or land-type association level).	+/-	• Riparian and river corridor management policies provide the clearest response to this Indicator. In upland stands, we are not aware of explicit consideration of landscape level connectivity
C6.3.c. Natural cycles that affect the productivity of the forest ecosystem		
6.3.c.1. Biological legacies of the forest community are retained at the forest and stand levels, consistent with the objectives of the management plan, including but not limited to: large live and declining trees, coarse dead wood, logs, snags, den trees, and soil organic matter.	+	• Most regeneration harvest operations entail retention of green trees, particularly of more uncommon species such as white pine • Retention in red pine plantations was observed to not be sufficient relative to this Indicator; we note that the guidelines in the Red Pine Project, once fully embraced, should improve retention practices
6.3.c.2. Forest management practices maintain soil fertility and organic matter, especially in the A horizon, while minimizing soil erosion and compaction. If degradation of soil quality occurs, as indicated by declining fertility or forest health, forest owners or managers modify soil management techniques.	+	• We believe that DNR practices do not detract from maintenance of soil fertility, but we are not aware of DNR formally monitoring soil fertility, compaction, etc. on sites subject to timber harvesting
6.3.c.3. Forest management practices maintain or restore aquatic ecosystems, wetlands (including peatlands, bogs, and vernal pools), and forested riparian areas (see also Criterion 6.5).	+	• DNR is clearly in strong conformance to this Indicator
6.3.c.4. Responses (such as salvage) to catastrophic events (such as wildfire, blowdown, and epidemics) are limited by ecological constraints.	+	• Salvage operations are conducted within environmental sideboards and are not heaping insult upon injury
C6.4. Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.	**C/NC**	• The main issue and potential gap with respect to this Criterion is that the old growth project that was initiative some 10-14 years ago and that has now morphed into a biodiversity initiative has yet to reach closure[10]
6.4.a. Where existing protected areas within the landscape are not of a size and configuration to serve the purposes listed in the above Applicability Note, forest owners or managers, whose properties are conducive to the establishment of such ecologically viable areas, designate them. The size, extent, and arrangement of on-site and off-site (i.e., on and off of the certified forest) representative sample areas are designated, documented, and justified.	+/-	• Conformance to this indicator is difficult to ascertain due to the fact that the old growth/biodiversity initiative is still not completed

[10] We acknowledge that DNR desires guidance as to the degree of representation and protection that is necessary to demonstrate conformance to this Criterion, in light of the existing network of federal, state and private forest reserves in Michigan. While existing forest reserves are certainly contributory to overall conformance, the audit team does not believe that DNR is therefore not obligated to make further contributions, as we understand is the intent and mandate behind the old growth/bio-diversity initiative. We cannot, however, provide definitive guidance to DNR, on the basis of our preliminary evaluation, as to the extent of additional reserves. We note that the Criterion speaks to "representative samples of existing ecosystems" that are to be protected in their natural state. DNR, not the auditors, must take responsibility for conducting an assessment of the current extent of reserves relative to this requirement.

6.4.b. Large private and public forest owners or managers use or carry out an analysis to evaluate the extent to which representative samples of existing ecosystems are adequately protected in the landscape. The size and extent of representative samples on public lands are determined through a management planning process that includes public input (see also Indicator 4.4.e).	+/-	• The old growth, now biodiversity, initiative has been in process for 14 years, a protraction with no compelling justification; conformance to this indicator would be enhanced by an accelerated pace and increased effort to achieve final results • Some field units are harvesting old growth candidate areas; this points to inadequate direction from Lansing as to interim policies during this ongoing period when the old growth/biodiversity initiative remains uncompleted. • There is a planning process but it is not being pursued at an appropriate pace.
6.4.c. The process and rationale used to determine the size and extent of representative samples are described in the public summary of the certificate.		
6.4.d. Where areas are under-represented in which natural disturbance may occur unconstrained, large, contiguous public forests (see Glossary) create and maintain representative system of protected areas to accommodate such acts of nature.	+/-	• While perhaps most of the state forests don't qualify as "large, contiguous public forests" we are not aware of any areas within the state forest system where there is, for instance, a "let burn" policy that would demonstrate conformance to this indicator. However, we consider this Indicator to be rather unrealistic for a highly populated state such as Michigan • DNR notes that due to the socio-political infeasibility of a let-burn policy, they manage to create early successional habitat—a good example observed by the audit team is the Kirtland's Warbler habitat restoration project
C6.5. Written guidelines shall be prepared and implemented to control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and to protect water resources.	C	• As is common with state agencies, MDNR manages the state forests with the benefit of an extensive body of written guidelines, though as detailed with respect to specific Indicators, there are opportunities for improvement
6.5.a. A set of forestry best management practices (BMPs), approved by the state forestry agency or otherwise appropriate jurisdiction (e.g., BIA), that address water quality and soil erosion is adhered to (see also 1.1.b). These guidelines may include provisions on riparian management zones (RMZs), skidding, access roads, site preparation, log landings, stream crossings, disturbance of sensitive sites, and wetlands.	+	• Michigan has BMPs and DNR adheres to them; however, BMP monitoring is primarily ad hoc or informal in between infrequent formal reviews—the last BMP review was 3+ years ago
6.5.b. At a minimum, implementation of BMPs and other resource protection measures will result in the following:	+	
Logging and Site Preparation Logging operations and construction of roads and skid trails are conducted only during periods of weather when soil is least susceptible to compaction, surface erosion, or sediment transport into streams and other bodies of water.	+/-	• While field personnel do demonstrate an awareness of and intent to avoid excessive soil compaction, rutting, etc., the process is quite informal for assuring conformance to these objectives
Logging damage to regeneration and residual trees is minimized during harvest operations.	+	• Timber sale contracts and the administration thereof place a clear emphasis on avoiding/minimizing residual stand damage • Loggers can be put on the "no bid" list maintained in Lansing for failure to meet these requirements, but there are loopholes in this process
Silvicultural techniques and logging equipment vary with slope, erosion hazard rating, and/or soil instability with the goal of minimizing soil disturbance. Areas that exhibit an extreme risk of landslide are excluded from management activities that may precipitate landslides.	+	• Generally, equipment is appropriate to the terrain in which they operate • Machines are kept off of steep or fragile slopes such as the sand dunes on the shore of Lake Superior
Plans for site preparation specify the following mitigations to minimize impacts to the forest resources:		• Observed post-harvest field conditions were consistently in conformance to this Indicator

1) Slash is concentrated only as much as necessary to achieve the goals of site preparation and the reduction of fuels to moderate or low levels of fire hazard. 2) Top soil disturbance and scarification of soils is limited to the minimum necessary to achieve successful regeneration of desired species.	+	
Transportation System (including permanent and temporary haul roads, skid trails, and landings) The transportation system is designed, constructed, maintained, and/or reconstructed to minimize the extent of the road network and its potential cumulative adverse effects.	+/-	• Road maintenance is primarily tied to pending timber sales; there is little or no budget for general road maintenance • Road maintenance primarily occurs in conjunction with the 10-year OI cycle, which is too long of an interval if major problems develop on sites not scheduled for OI for 5-9 years.
Access to temporary and permanent roads is controlled to minimize significant adverse impacts to soil and biota while allowing legitimate access, as addressed by Principles 3 and 4 and identified in the management plan.	+/-	• On the state forests we visited, forest managers are actively trying to control road access with gates, berms, wood piles, etc. • However, it takes a written order from the DNR Director to close a road, which limits field managers' ability to address problem areas
Failed drainage structures or other areas of active erosion caused by roads and skid trails are identified, and measures are taken to correct the drainage problems and stabilize erosion.	+/-	• Due to lack of budgets, there is very little active road system monitoring and maintenance not tied to a pending timber sale • Some BMP non-conformances were observed and DNR staff acknowledged that there are other such instances
Stream and Water Quality Protection Stream crossings are located and constructed in a way that minimizes fragmentation of aquatic habitat (see Glossary) and protects water quality.	+	• Broadly, riparian area and aquatic system management is exemplary
Visual and Aesthetic Considerations Forest owners or managers limit and/or reduce negative impacts on visual quality caused by forest management operations.	+	• As observed in locales such as timber harvesting within or adjacent to campgrounds, DNR field managers do an excellent job of mitigating the adverse visual impacts of timber harvests.
C6.6. Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.	**C**	• Though there is some variation across field units, there is only very limited use of chemical herbicides on the state forests. An exception to the norm is the red pine plantations in the Northern Lower Peninsula, where chemical use is relatively intensive • Some chemicals used on the state forests are on the FSC list of prohibited chemicals[11] and it will be necessary to cease use of these chemicals prior to award of certification: --Benlate (benomyl), on FSC list due to persistence; if used only in tree nurseries and if the nurseries are not located within a forest then this use will likely be determined by the full evaluation team to be outside the scope of the certification process. If, alternatively, the tree nurseries are located within state forests (as opposed to land owned by the state), then SCS will need to consult with FSC as to the issue of prohibition of use --Cutrine (chelated copper sulfate), toxicity, but a full evaluation team will likely determine that DNR is using this outside the scope of certification --Transline (clopyralid), large persistence range in soil (15-287 days, limit is 100 days); if this chemical is not used on the state forests, then it is a non-issue

[11] In the draft version of this report, it was erroneously stated that the chemicals at issue are on WHO 1A and/or 1B lists. Rather, these chemicals are on the FSC list of prohibited chemicals; the FSC list is comprised of WHO 1A and 1B *plus* additional chemicals that FSC has determined to be unacceptable for other reasons such: chlorinated hydrocarbons, persistence, toxicity or bio-accumulation. The chemicals we have listed, while not WHO 1A or 1B chemicals are listed as prohibited by FSC for one or more of these additional reasons. The FSC list of prohibited chemicals is available at www.fsc.org.

		--Rotenone (derris root), toxic to fish, also likely to be determined to be outside the certification scope since it is being used by the Fisheries Division to address fish management issues, particularly control of non-native species --Diazonin, on FSC list due to toxicity --Imidacloprid, large persistence range in soil (48-190 days, limit is 100 days) --Goal (oxyflourofen), on FSC list due to toxicity

6.6.a. Forest owners or managers implement integrated pest management and rely on methods that are the most environmentally compatible within a context of economic viability and social acceptability.	+	• DNR's response to pest & pathogens such as emerald ash borer, jack pine budworm, oak wilt, etc. demonstrates conformance to this indicator; generally, DNR scores high with respect to forest protection and forest health
6.6.b. Silvicultural systems and prescriptions are used to lower natural susceptibility and vulnerability of stands to insect and disease outbreaks.	+	• DNR's response to the emerald ash borer provides a good example of conformance to this indicator
6.6.c. Pesticides are applied as a management tool only in limited circumstances and under controlled conditions.	+	• In the Traverse City unit, there has been only 1 herbicide treatment in the last 15 years
6.6.d. Forest owners or managers develop written pest control strategies as a component of the management plan. (see also Criterion 7.1)	+	
6.6.e. A written prescription, which includes a discussion of precautions and potential environmental effects, is prepared for each pesticide that is used. Records are kept of pest occurrences, control measures, and incidences of worker exposure to chemicals.	+	• Use of chemicals requires a FTP and a completion report
C6.7. Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.	C	There were no observed instances of non-conformance to this Criterion that arose during the scoping audit, but we had very limited occasion to observe heavy equipment in the field.
6.7.a. In the event of a spill of hazardous material, forest owners or managers immediately contain the material, report the spill as required by applicable regulations, and engage qualified personnel to perform the appropriate removal and remediation.	?	• We didn't have the opportunity during the scoping audit to preliminarily assess conformance to this Indicator
6.7.b. Waste lubricants, anti-freeze, containers, and related trash are stored in a leakproof container until they are transported to an approved off-site disposal site.	+	• No observed non-conformances
6.7.c. Broken or leaking equipment and parts are repaired or removed from the forest.	+	• No problems or non-conformances observed during the field audits
6.7.d. Equipment is parked away from riparian management zones, sinkholes, or supplies of ground water.	+	• Nothing to suggest a non-conformance with this indicator
C6.8. Use of biological control agents shall be documented, minimized, monitored, and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.	C	
6.8.a. Exotic (i.e., non-indigenous), non-invasive predators or biological control agents are used only as part of a pest management strategy for the control of exotic species of plants, pathogens (see Glossary), insects, or other animals when other pest control methods are, or can reasonably be expected to prove, ineffective. Such use is contingent upon peer-reviewed scientific evidence that the agents in question are non-invasive and are safe for indigenous species because, for example, exotic species can host pathogens that might diminish biodiversity in the forest.		• While we did not have the opportunity to delve into the matter of use of biological control agents and exotic species, such as in the context of IPM, it is our sense that DNR employs very little or no use of exotics. Prior to the full evaluation, it would be helpful of DNR provided the audit team with some focused information on the extent of use of exotic species
C6.9. The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.	C	

6.9.a. Except on plantation sites (see also Criterion 10.4), the use of exotic tree species is permitted only in the first successional stages or other short-term stages for the purposes of restoring degraded ecosystems.	+	• Aside from grass seed mix, there is no use of exotic species on the state forests
6.9.b. The use of exotic species (see Glossary) is contingent on peer-reviewed scientific evidence that the species in question is non-invasive and will not diminish biodiversity. If non-invasive exotic species are used, the provenance and location of use are documented, and their ecological effects are actively monitored.	+	• This was not adequately covered in the scoping audit to enable a robust assessment at this point, but it is our sense that there is not a problem with conformance to this Indicator
6.9.c. Written documentation is maintained for the use of exotic species.	+	
6.9.d. Forest owners or managers develop and implement control measures for invasive exotic species.	+	• DNR managers are sensitive to invasive exotics and informally monitor their spread
C6.10. Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion: **a) Entails a very limited portion of the forest management unit; and** **b) Does not occur on High Conservation Value Forest areas; and** **c) Will enable clear, substantial, additional, secure, long-term conservation benefits across the forest management unit.**	C	
6.10.a. Over the life of the ownership, forest to non-forest conversions are limited to the threshold of 1% of the forest area or 100 acres, whichever is smaller, except that a parcel up to two acres in size may be converted for residential use by the forest owner or manager.[12]	+/-	• Disposal of land for higher and better uses such as sub-divisions or other forms of development are not with the DNR mission • Receipts from land sales are used to acquire more strategic lands • There is a screening process involving the Land Exchange Review Committee that helps to assure that lands possessing high conservation values are not being disposed in a manner that will lead to a loss of those values • Despite the above, some forest lands do leave state ownership and end up being developed
6.10.b. When private forest lands are sold, a portion of the proceeds of the sale is reinvested in additional forest lands and/or forest stewardship.	NA	
P7 A management plan -- appropriate to the scale and intensity of the operations -- shall be written, implemented, and kept up to date.[13] The long-term objectives of management, and the means of achieving them, shall be clearly stated.		

[12] We do not consider this indicator to be literally applicable to forest operations of the size and magnitude of DNR's management of the Michigan State Forests. DNR's ongoing activities in issuing easements for pipelines, well sites, gravel pits, power line rights-of-way, etc will not result in a non-conformance, provided that DNR seeks to minimize forest loss wherever possible within its overall management mandate. Loss of "more than 100 acres" of forest land on a 3.9 million acre estate would not constitute non-conformance to this Criterion provided that the extent of forest loss is very limited and not leading to the loss of high conservation values.

[13] Eco-regional plans as outlined in the Lake Superior Forest Planning Guide, once completed, are highly likely to be sufficient to meet the "appropriate to the scale and intensity of the operations" standard

Note: Many of the Indicators associated with this Principle, below, presume that there is a *current* "forest management plan" against which to assess conformance. In that DNR presently does not have a forest-level management plan that is more current than 10 years ago and in that there are no "eco-regional plans" presently completed, it is not possible to meaningfully ascertain conformance to numerous Indicators. As such, we are presently not offering comment on numerous Indicators.		
7.1. The management plan and supporting documents shall provide: **a) Management objectives. b) Description of the forest resources to be managed, environmental limitations,** **land use and ownership status, socio-economic conditions, and a profile of adjacent lands.** **c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories. d) Rationale for rate of annual harvest and species selection. e) Provisions for monitoring of forest growth and dynamics. f) Environmental safeguards based on environmental assessments. g) Plans for the identification and protection of rare, threatened and endangered species.** **h) Maps describing the forest resource base including protected areas, planned management activities and land ownership.** **i) Description and justification of harvesting techniques and equipment to be used.**	**NC**	• Forest-level (as opposed to compartment level) plans are very much out of date and largely irrelevant • No management plans have yet to be completed under the Lake Superior State Forest template; the other eco-teams no not plan on fully using the template • The regional land management planning process is not being pursued at an appropriate pace; there is a need to accelerate the process • Clearer, more uniform direction from the top down is required; most field units express uncertainty as to where things stand in the regional/ecosystem planning process • Eco-team members have not been relieved of other work obligations, which means that they are unable to devote sufficient time and attention to plan development activities, further slowing the process; there is perhaps a need to contract some components of the plan development to outside service providers if sufficient internal staff resources cannot be marshalled
7.1.a. Management objectives	-	• Available planning documents are very dated with respect to articulating management objectives
7.1.a.1. A written management plan is prepared that includes the landowner's short-term and long-term goals and objectives (ecological, social, and economic). The objectives are specific, achievable, and measurable.		• Long-term targets and goals for ecological conditions, specific to delineated eco-systems, have been developed
7.1.a.2. The management plan describes desired future conditions that will meet the long-term goals and objectives and that determine the silvicultural system(s) and management activities to be used.		
7.1.b. Description of forest resources to be managed, environmental limitations, land use and ownership status, socioeconomic conditions, and profile of adjacent lands	-	• The potential gaps with respect to description of forest resources pertain to socioeconomic conditions and profiles of adjacent lands • The lack of currency of management planning documents also constitutes a gap
7.1.b.1. The management plan describes the timber, fish and wildlife, harvested non-timber forest products, soils, and non-economic forest resources.		
7.1.b.2. The management plan includes descriptions of special management areas; sensitive, rare, threatened, and endangered species and their habitats; and other ecologically sensitive features in the forest.		
7.1.b.3. The management plan includes a description of past land uses and incorporates this information into the vision, goals, and objectives.		
7.1.b.4. The management plan identifies the legal status of the forest and its		

resources (e.g., ownership, usufruct rights (see Glossary), treaty rights, easements, deed restrictions, and leasing arrangements).		
7.1.b.5. The management plan identifies relevant cultural and socioeconomic issues (e.g., traditional and customary rights of use, access, recreational uses, and employment), conditions (e.g., composition of the workforce, stability of employment, and changes in forest ownership and tenure), and areas of special significance (e.g., ceremonial and archeological sites).		
7.1.b.6. The management plan incorporates landscape-level considerations within the ownership and among adjacent and nearby lands, including major bodies of water, critical habitats, and riparian corridors shared with adjacent ownerships.		
7.1.c. Description of silvicultural and/or other management system	-	• Available planning documents are probably quite out of date with respect to this topic
7.1.c.1. Silvicultural system(s) and prescriptions are based on the integration of ecological and economic characteristics (e.g., successional processes, soil characteristics, existing species composition and structures, desired future conditions, and market conditions). (see also sub-Criterion 6.3.a)		
7.1.c.2. Prescriptions are prepared prior to harvesting, site preparation, pest control, burning, and planting and are available to people who implement the prescriptions.		
7.1.d. Rationale for the rate of annual harvest and species selection	+	
7.1.d.1. Calculations for the harvests of both timber and non-timber products are detailed or referenced in the management plan and are based on net growth, yield, stocking, and regeneration data. (see also 5.6.b)		• DNR uses area control regulation and the audit team considers this to be quite acceptable, despite what this Indicator otherwise might imply
7.1.d.2. Species selection meets the social and economic goals and objectives of the forest owner or manager and leads to the desired future conditions while maintaining or improving the ecological composition, structures, and functions of the forest.		
7.1.d.3. The management plan addresses potentially disruptive effects of pests, storms, droughts, and fires as they relate to allowable cut.		
7.1.e. Provisions for monitoring forest growth and dynamics (see also Principle 8)	+	• DNR's Operations Inventory and emerging IFMAP systems clearly constitute conformance to this sub-criterion
7.1.e.1. The management plan includes a description of procedures to monitor the forest.	+/-	• The problem is that the strategic plans are woefully out of date, with the exception of two plans developed roughly 10 years ago
7.1.f. Environmental safeguards based on environmental assessments (see also Criterion 6.1.)	+/-	• Clearly, DNR has an extensive system of environmental safeguards and supporting environmental analyses; the question is how current they are in the context of the management plans
7.1.g. Plans for the identification and protection of rare, threatened, and endangered species. (see also Criterion 6.3.)	+	
7.1.h. Maps describing the forest resource base including protected areas, planned management activities, and land ownership.	+	• DNR's GIS capabilities can accomodate all needed mapping
7.1.h.1. The management plan includes maps of such forest characteristics as: relevant landscape-level factors; property boundaries; roads; areas of timber		

production; forest types by age class; topography; soils; riparian zones; springs and wetlands; archaeological sites; areas of cultural and customary use; locations of sensitive, rare, threatened, and/or endangered species and their habitats; and designated High Conservation Value Forests.		
7.1.i. Description and justification of harvesting techniques and equipment to be used. (see also Criterion 6.5)	**-**	• It is not clear that DNR documents adequately address this sub-criterion
7.1.i.1. Harvesting machinery and techniques are discussed in the management or harvest plan and are specifically matched to forest conditions in order to minimize damage.	**+/-**	• Harvesting machinery is generally matched to forest conditions though we observed some situations were old and larger than needed logging equipment is in use • Is harvesting machinery addressed in the management plans?
7.1.i.2. Conditions for each timber sale are established by a timber sale contract or written harvest prescription and accompanying timber sale map.	**+**	
C7.2. The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.	**NC**	• The protracted delays and extensions in the timing of development of new strategic (ecosystem-level) plans does not demonstrate conformance to this criterion.
7.2.a. Operational components of the management plan are reviewed and revised as necessary or at least every 5 years. Components of the long-term (strategic) management plan are revised and updated at the end of the planning period or when other changes in the management require it. (see also Criterion 8.4)	**+/-**	• Operation/tactical components of the overall "plan," loosely defined are being adequately kept current through the compartment review process; they cannot be said for strategic/long-range components
C7.3. Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plans.	**C**	
7.3.a. The forest owner or manager assures that workers are qualified to implement the management plan (see also Criterion 4.2).		• DNR employees are highly qualified and well trained • In contrast, the extent to which loggers have received organized training is not clear. But it is apparent that DNR is not as actively focused on logger training than are managers of large private forests
7.3.b. The management plan is understandable, comprehensive, and readily available to field personnel.	**+/-**	• Annual operating plans are fully functional—it is what DNR does best • The situation with respect to large-scale, long-term plans is not as positive
C7.4. While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1.	**C/NC**	• As a state agency operating under freedom of information statutes, there is a high degree of transparency and public access to pertinent documents and data. But planning materials are woefully dated.
7.4.a. A management plan summary that outlines management objectives (from sub-Criterion 7.1.a.), whether on private lands or the land pool under a resource manager, is available to the public at a reasonable fee. Additional elements of the plan may be excluded, to protect the security of environmentally sensitive and/or proprietary information.		
7.4.b. Managers of public forests make forestry-related information easily accessible (e.g., available on websites) for public review, including that		• As a public agency, resource information is extensively available to the public; the problem is that planning information (e.g., excerpts from plans) is simply not current/up-to-date

required by Criterion 7.1.	+	
P8 Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.		
C8.1. The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations, as well as, the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.	**C**	
8.1.a. The frequency of monitoring activities follows the schedule outlined in the management plan.	**?**	• Given the out of date nature of the management plans, it is unlikely that any monitoring regimes contained therein are of much currency or relevance to contemporary day to day management of the state forests
8.1.b. Monitoring is carried out to assess: • The degree to which management goals and objectives have been achieved; • Deviations from the management plan; • Unexpected effects of management activities; • Social (see Criterion 4.4) and environmental (see Criterion 6.1) effects of management activities.	**+/-**	• Social effects are not presently being monitored to an extent and in a format that would constitute adequate conformance to this Indicator
8.1.c. Public and large, private land owners or managers take the lead in identifying, initiating, and supporting research efforts to address pertinent ecological questions. Small and medium private land owners or managers use information that has been developed by researchers and other managers.	**+/-**	• There is a mixed situation with respect to research. The level of investment in in-house research is significantly reduced and is viewed as inadequate by mid-level departmental personnel. But there are some positive indications such as the Fire Experiment Station in Roscommon
8.2. Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: a) Yield of all forest products harvested. b) Growth rates, regeneration and condition of the forest. c) Composition and observed changes in the flora and fauna. d) Environmental and social impacts of harvesting and other operations e) Cost, productivity, and efficiency of forest management	**NC**	• There is a gap between the scope and range of issues that this Criterion requires to be monitored and what DNR is currently monitoring. Aspects such as social impacts, condition of the forest, etc. are not being adequately addressed in a systematic manner
8.2.a. Yield of all forest products harvested	+	
8.2.a.1. The forest owner or manager maintains records of standing inventories of timber and harvest volumes of timber and non-timber species (quality and quantity).		• The OI process, in the process of being replaced by the IFMAP, constitutes adequate conformance to this Indicator
8.2.b. Growth rates, regeneration, and condition of the forest	+	
8.2.b.1. An inventory system is established and records are maintained for: 1) Timber growth and mortality (for volume control systems); 2) Stocking, and regeneration;		• Except for monitoring of soil characteristics/condition, the other subject areas appear to be adequately addressed in some form of ongoing monitoring

3) Stand-level and forest-level composition and structure (e.g., by use of tools, such as ecological classification systems); 4) Abundance, regeneration, and habitat conditions of non-timber forest products; 5) Terrestrial and aquatic features; 6) Soil characteristics (e.g., texture, drainage, existing erosion); 7) Pest conditions.		
8.2.c. Composition and observed changes in the flora and fauna	+/-	
8.2.c.1. Forest owners or managers periodically monitor the forest for changes in major habitat elements and in the occurrence of sensitive, rare, threatened, or endangered species or communities.		
8.2.d. Environmental and social impacts of harvesting and other operations	-	• There is a likely gap with respect to monitoring of social impacts, as is discussed above; we are however willing to reverse our judgment if DNR provides sufficient evidence of the manner in which it systematically monitors social impacts
8.2.d.1. The environmental effects of site-disturbing activities are assessed (e.g., road construction and repair, harvesting, and site preparation).	+	• Conformance to this indicator would be better demonstrated at the time of the full evaluation if DNR provided the audit team with a summary of the means and procedures by which post-activity environmental effects are monitored
8.2.d.2. Creation or maintenance of local jobs and public responses to management activities are monitored.	+/-	• We do not believe that DNR monitors creation or maintenance of local jobs supported by activities on the state forests • The public participation processes in place probably constitute adequate response to requirement that "public response to management activities be monitored."
8.2.d.3. Sites of special significance to American Indians are monitored in consultation with tribal representatives (see also Principle 3).	+/-	• While we consider it unlikely that sites of special significance to American Indians are being adversely impacted by DNR activities, we also cannot point to compelling evidence of "consultation" with tribal representatives with respect to sites of special significance
8.2.e. Cost, productivity, and efficiency of forest management	+	
8.2.e.1. Forest owners or managers monitor the cost and revenues of management in order to assess productivity and efficiency.	+	• DNR devotes enormous attention to budgetary and cost control matters as well as revenue generation
C8.3. Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as the "chain of custody."	NC	• As DNR sells standing timber, only, the department's chain-of-custody obligations will be very limited, primarily to keeping accurate records of stumpage sales by place, time and purchaser, records that can be made available to the certifier's audit team • Because DNR does not yet have a written description of its limited CoC responsibilities, there is presently not adequate conformance; but that gap can be easily closed • But aside from strict CoC requirements or obligations, DNR should also affirmatively take steps to educate the forest products industry in Michigan that stumpage from the state forests will lose its FSC certified status unless every subsequent custody holder, from the logger onwards, holds or is covered by a valid FSC CoC certificate. A full certification evaluation would probably result in a strong recommendation for DNR to educate the Michigan forest products industry on the CoC requirements that will need to be met for timber from the state forests to make it into the final product marketplace as certified.
C8.4. The results of monitoring shall be incorporated into the implementation and revision of the management plan.	C/NC	• It is difficult to confirm conformance to this Criterion in the absence of active revision to the management plans; that is, in the absence of more substantive progress in the completion of eco-

		regional plans • But it is our sense that DNR presently does not have in place protocols for systematically incorporating the results of monitoring into plan revisions
8.4.a. Discrepancies between the results of management activities or natural events (i.e. yields, growth, ecological changes) and expectations (i.e. plans, forecasts, anticipated impacts) are appraised and taken into account in the subsequent management plan.		
C8.5. While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.	**C**	• As a public agency, monitoring results are generally available to the interested public
8.5.a. A summary outlining the results of monitoring is available to the public at a reasonable fee, whether on private lands or a land pool under a resource manager or group certification.	-	• Such as summary does not currently exist
8.5.b. Managers of public forests make information related to monitoring easily accessible (e.g., available on websites) for public review.	+	• Information that is responsive to this Indicator is posted on the DNR web site
P9 Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach. **Note: As is discussed in the main body of this report, it is the audit team's general sense that DNR's overall management system applied to the State Forests (comprised of tactical planning and administration combined with programs such as the Natural Features Inventory, the Natural Areas Program, the Old Growth/Biodiversity Program, endangered species habitat recovery projects, the river assessments, watercourse buffer policies, etc.) collectively results in a situation in which high conservation values are, in fact, being effectively identified and conserved. As such, we do not see P9 being an impediment to the award of certification. However, a clear demonstration of conformance will be enhanced if DNR develops a "cross reference" document that comprehensively summarizes the various activities and programs that address the analytical, consultative and policy requirements found in this Principle.[14]**		
C9.1. Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest	**C**	

[14] The Wisconsin DNR, for its management of the Wisconsin State Forests, received the following CAR which we addresses a gap that is quite similar to the Michigan DNR's present situation:

> **CAR 2004.9: Develop a Written Crosswalk between HCVF Requirements found in P.9 and DNR's Approach to Identifying and Managing Areas of High Conservation Value**
> To be completed by the time of the first annual audit after award of certification, DNR must develop a written cross-reference guide (i.e., a "crosswalk") that provides an express description of how DNR conforms to each of the affirmative analytical and consultative requirements concerning forest areas of high conservation value, as set forth in Principle 9 of the FSC Lake States Regional Standard. The written cross-reference guide is to be posted on the DNR web-site upon its completion.

Were Michigan DNR to complete such as written-cross reference guide prior to the full evaluation, the need for a CAR will likely be eliminated.

management.		
9.1.a. Attributes and locations of High Conservation Value Forests are determined by: 1) Globally rare, threatened, or endangered features, habitats, or ecosystems that may be present in the forest (suggested sources of information are: The Nature Conservancy, World Wildlife Fund, Conservation International, World Resources Institute); 2) Regionally and locally rare, threatened, or endangered features, habitats, or ecosystems that may be present in the forest; culturally and tribally significant areas; or municipal watersheds that may be present in the landscape and/or certified forest (suggested sources of information include natural and cultural heritage agencies); 3) Appropriate consultations with local and regional scientists and other stakeholders; 4) Public review of proposed HCVF attributes and areas on large-scale and public ownerships (see also 7.4, 4.4.e., 4.4.f.); 5) Integration of information from consultations and public review into proposed HCVF delineation; 6) Delineation by maps and habitat descriptions		• The Michigan Natural Features Inventory (MNFI) is queried as part of compartment reviews; the principal interface with MNFI is the DNR's Natural Heritage Program • Relative to the sub-Indicators, a comprehensive cross-reference guide that summarizes how DNR meets each requirement would be very helpful at the time of the full evaluation
C9.2. The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.	**?**	Note: At the time that the Lake States Regional Standard was developed, it was the working group's understanding that this Criterion pertained only to the certifiers and the conduct of the certification evaluation. Subsequently, however, FSC issued written guidance in which it was made clear that the certification applicant also has an obligation to engage/consult stakeholders in the definition and identification of what constitutes "high conservation values" in the regional context as well as in the development of management strategies designed to maintain these high conservation values within the working forest. • At the time of the full evaluation, it will be helpful if DNR can provide the audit team with a compilation/summary of the manner in which stakeholders have been afforded opportunities to provide input on matters that fall under the scope of this Principle.
C9.3. The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.	**NC**	• The lack of current forest plans that include an explicit presentation of DNR's approach to management of areas of high conservation values constitutes a gap. • Conformance can be demonstrated through the development of a public available summary document that provides an exposition of how DNR defines, identifies and manages areas possessing high conservation values
9.3.a. Forest management plans and activities are appropriate for maintaining, enhancing and/or restoring attributes that make the area an HCVF.	+	
9.3.b. Active management in HCVFs is allowed only when it maintains or enhances high conservation values.	+	
9.3.c. The management-plan summary includes information about HCVF	-	• Current management planning documents do not address this Indicator

management without compromising either the confidentiality of the forest owner or manager or environmentally and culturally sensitive features (see also sub-Criterion 7.1.f).		
9.3.d. Forest owners or managers of HCVFs (forests and/or stands) coordinate conservation efforts with forest owners or managers of other HCVFs in the landscape.	**?**	• It is our general sense, in the absence of direct evidence, that DNR is engaged in some forms of collaboration and coordination, particularly with the USDA Forest Service, but that more focused collaboration with respect to HCVF would provide a better demonstration of conformance
C9.4. Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.	**C/NC**	•
9.4.a. Forest owners or managers of small forests may satisfy this requirement with informal observations (see 8.1 and 8.2.). When observations detect changes, the changes are documented.	**NA**	
9.4.b. Forest owners or managers of mid-sized and large forests monitor activities within and adjacent to HCVFs that may affect HCVF attributes (see Criteria 7.2, 8.1 and 8.2). Monitoring is adequate to track changes in HCV attributes, and may include informal observations. When monitoring detects changes to HCV attributes, the changes are documented.	**+/-**	• Documentation, in a compiled and readily accessible form, of HCV monitoring activities needs to be improved
P10 Plantations shall be planned and managed in accordance with Principles and Criteria 1 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests. **Note: This Principle applies only when a forest management operation is engaged in practices that, per FSC definitions, constitute "plantation forest management." Forest management regimes are considered "plantation forest management" if the result of these practices is a working forest landscape in which most of the attributes and characteristics of a natural forest are missing. Notably, the act of establishing a new stand through planting, in and of its self, does not constitute "plantation forest management."** **In the judgment of the audit team, and over the breadth of the Michigan State Forests, DNR is practicing "natural forest management" rather than "plantation forest management" even though there is some use of manual planting for stand establishment after a regeneration harvest. The most notable situation that comes closest to "plantation forest management" is the red pine management in the Northern Lower Peninsula where stands are established through planting *and* were intermediate stand treatments as well as very limited green retention at the time of final harvest constitutes the most intensive, plantation-like management on the State Forests.** **But over the breadth of the entire State Forest system, we consider this Principle to not be applicable. Efforts to impute more natural attributes into the red pine management regimes will further help to assure that this Principle is determined to be non-applicable at the time of the full evaluation.**		
C 10.1. The management objectives of the plantation, including		

natural forest conservation and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan.		
C 10.2. The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods shall be used in the layout of the plantation, consistent with the scale of the operation. The scale and layout of plantation blocks shall be consistent with the patterns of forest stands found within the natural landscape.		
10.2.a. Plantation layout minimizes soil degradation and erosion and protects soil and water quality by accounting for slope, aspect, erodibility, and movement of surface water (see also Criterion 6.5).		
10.2.b. Plantations are managed and integrated into the surrounding landscape in order to improve natural habitats.		
10.2.c. For plantation harvests larger than forty acres lacking within-stand retention, the size of the opening is justified by credible scientific analysis.		
10.2.d. Plantations may be re-established on existing plantation sites (see also Criterion 10.5.a.), provided they are consistent with the management plan. They may be established on agricultural lands in historically forested areas (see also Criterion 6.10).		
10.2.e. Regeneration in previously harvested areas reaches a mean height of at least ten feet orachieves canopy closure (see Glossary) before adjacent areas are harvested, unless an earlier harvest can be justified by credible scientific analysis. Forest buffers between harvest units are arranged to allow contiguous populations of native species		
C10.3. Diversity in the composition of plantations is preferred, so as to enhance economic, ecological and social stability. Such diversity may include the size and spatial distribution of management units within the landscape, number and genetic composition of species, age classes and structures.		
10.3.a. Forests containing plantations are managed to create and maintain structural and species diversity that results in viable wildlife habitat and long-term soil maintenance and replenishment.		
10.3.b. Plantation-management activities are planned to generate and maintain long-term employment.		
C10.4. The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of		

biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts.		
10.4.a. The use of exotic plant species (see Glossary) is contingent on peer-reviewed scientific evidence that the species in question is neither invasive nor a threat to the indigenous biodiversity. If non-invasive exotic species of plants are used, their provenance and location of use are documented, and their ecological effects are actively monitored.		
10.4.b. The genetic composition of plantations is suitable for local conditions and is managed for diversity to avoid infestations of pests.		
C10.5. A proportion of the overall forest management area, appropriate to the scale of the plantation, shall be managed so as to restore the site to a natural forest cover.		
10.5.a. The ratio of plantations to natural and semi-natural forests (see Glossary), as well as their spatial distribution, maintains and/or restores the landscape to a condition that includes a diversity of community types, wildlife habitats, and ecological functions similar to a mosaic of native forests.		
10.5.b. On land converted from non-forest uses to forest plantation uses, a percentage of the total area owned in the landscape is maintained as and/or restored to natural and semi-natural forest cover. The minimum percentage plantation area that is maintained in semi-natural or natural forest is: ▪ for 100 acres or less, at least 10 percent. ▪ for 101 to 1,000 acres, at least 15 percent. ▪ for 1,001 to 10,000 acres, at least 20 percent. ▪ for > 10,000 acres, at least 25 percent.		
10.5.c. On currently forested land, up to 30% of the area may be managed as plantations (see Glossary). This percentage is reduced to 15% over a 50-year period.		
10.5.d. Areas of forest and/or plantation to be restored to natural and semi-natural conditions are chosen through a landscape analysis that focuses on enhancing ecological integrity and habitat connectivity.		
C10.6. Measures shall be taken to maintain or improve soil structure, fertility, and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice of species shall not result in long term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns.		
C10.7. Measures shall be taken to prevent and minimize outbreaks		

of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.		
C10.8. Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-site and off-site ecological and social impacts, (e.g., natural regeneration, effects on water resources and soil fertility, and impacts on local welfare and social well-being), in addition to those elements addressed in Principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access.		
C10.9. Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible directly or indirectly of such conversion.		